Canon

Network Video Recorder

VK-64/VK-16

Administrator's Manual

Ver. 2.1

ENG

Introduction

Thank you for purchasing **Network Video Recorder VK-64 v2.1** (hereafter referred to as **VK-64**). **VK-64** is a network video recording and monitoring system and consists of the **Storage Server** and **Viewer**. Please read this manual prior to operation. This manual also explains how to use the **Network Video Recorder VK-16 v2.1** (hereafter referred to as **VK-16**), VK-Lite v2.1 (hereafter referred to as **VK-Lite**), and Viewer-Only use. See P. 1-6 for the difference between the VK-64 and VK-16. See P. 1-29 for the difference between VK-64/VK-16 and VK-Lite. See P. 5-8 for the functions not available in the Viewer Only mode.

* VK-16 and VK-Lite have the same functionality as VK-64 outlined in this manual, unless explicitly indicated otherwise.

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Icon	Explanation
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Tip	Supplementary information or a reference to an operation. Users are recommeded to read these memos.

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Purpose of This Manual

This manual is written for the System Administrator installng and operating the VK-64/VK-16 system.

It explains the functions of VK-64/VK-16 and introduces more appropriate system deployment methods. Use this manual as a reference when making a backup of data or troubleshooting a problem.

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About Manuals

VK-64/VK-16 comes with three manuals including this document.

- *Setup Guide*

  A manual that introduces this software.

  Be sure to read this manual when using the software for the first time.

- *Viewer Operation Guide*

  A simplified manual for the VK Viewer.

  Be sure to read the *Administrator's Manual* for details.

- *Administrator's Manual* (this manual - pdf file)

  This manual is intended for the System Administrator to install and operating this software.

  Be sure to read this manual to ensure proper system operation.

Important: Before Starting Operations

It is recommended that you perform tests under actual conditions before starting operations.

- This recording software may not operate as your settings in recording or displaying live video, depending on the capabilities of your PC and the network environment.
- When load on your computer CPU and hard disk is high, the specified frame rate may not be available, or the video recording may be interrupted or the Viewer operation may take longer. Also, when available disk space is low, the disk load may increase and the video recording may be interrupted.
- The performance of storage servers and viewers may be negatively affected on the PC, where anti-virus software or firewall is running.
- If you use a proxy server, recording frame rate may not be achieved as specified or live video monitoring may be interrupted. Also, communication between the Storage Server and Viewer may occasionally be disconnected. (→ P. 3-9, P. 4-5)
- If you are operating using IPSec, the recording and display performance may be degraded.
- See "Notes on Operating Environment" (→ P. 1-12 ~ P. 1-15) for information on OS you use.
- When recording to a NAS server, it is recommended to separate the communication networks for the camera and NAS.
- Use recommended NAS servers with Windows Storage Server 2003 or Windows Storage Server 2003 R2.
- Although the audio function of the VB-C500D, VB-C60, VB-C300, VB-C50i, VB-C50iR, and VB-C50FSi can also be used, take note of the following warnings.
  - The VK Viewer supports audio transmission and reception.
  - Audio data can be recorded. However, audio data cannot be recorded individually, and must be recorded together with video data.
  - Only when playing video, the recorded video (JPEG) is synchronized with the recorded audio. However, the audio and images may not synchronize depending on the environment (→ P. 4-35).
  - The audio stream may be interrupted due to the performance of your PC and the network environment.
  - The audio function is not available via a proxy server.
  - Audio may be interrupted on the PC where anti-virus software is running.
- The software may not be able to record video, if you use it under the condition where the IP address of storage servers or camera servers are occasionally changed. So, please be sure to use fixed IP addresses.

1

System Overview

Chapter Overview

This chapter provides preliminary information you should know before using the VK-64/VK-16 and explains the operating environment and basic concept you need to understand to design your system.

Preparation Flow

Explains the flow from setting up the VK-64/VK-16 to starting the operation.

System Operation Overview

Explains the system operating environment such as the number of Camera Servers available for the Storage Server, product types, and the number of licenses for each product.

Communication Mechanism of VK-64/VK-16

Explains the communication mechanism of the VK-64/VK-16 with, using a typical system configuration.

Operating Environment

Explains operating environment of the VK-64/VK-16 and points of notice regarding the OS environment.

Notes on Operating Environment

Explains about each version of Windows OS.

System Design Concept

Explains the concept and points of notice when you design the system.

VK-Lite

Explains about functional limitations and the specification comparison between VK-Lite and VK-64/VK-16.

Preparation Flow

The following explains the flow from setting up the VK-64/VK-16 to starting the operation.

Step1 Set up Camera Servers

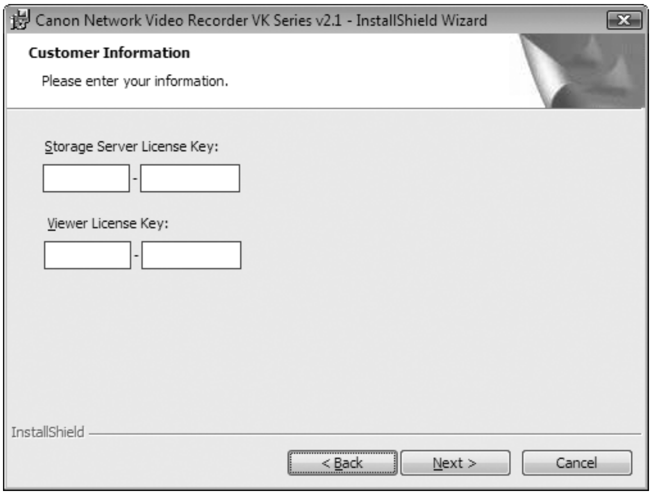
The first step is to set up your Camera Servers. See your Camera Server manuals for connection in detail.

For details regarding supported camera servers, see P. 1-10.

Step2 Install Storage Server and Viewer

The Storage Server and Viewer can be installed on one PC. The Viewer can be installed on other computers on the network, and it will access recorded video from the Storage Server through the network.

Server setting, event notification to users and user privilege configuration can be set via [Storage Server Configuration] dialog.



Canon Network Video Recorder VK Series v2.1 - InstallShield Wizard

Customer Information

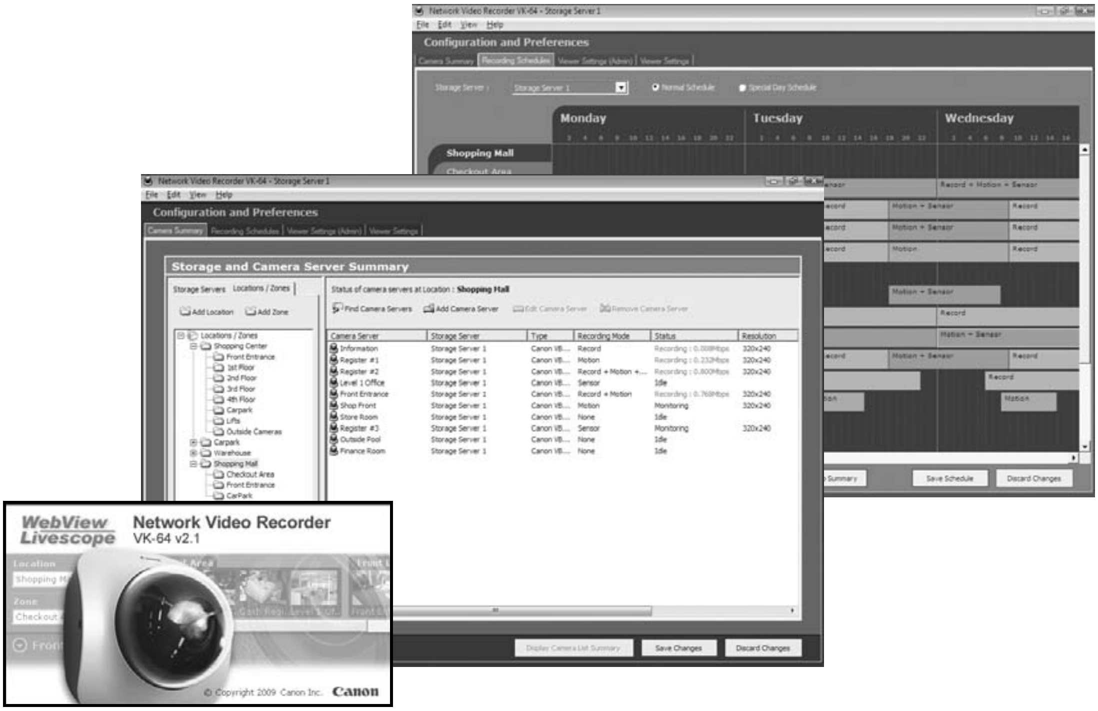
Please enter your information.

Storage Server License Key:

Viewer License Key:

Step3 Configure Recording Settings

Register Camera Servers and Storage Servers and set up recording schedules.


Network Video Recorder VK-64 - Storage Server 1
File Edit View Help
Configuration and Preferences
Camera Summary | Recording Schedules | Viewer Settings (Admin) | Viewer Settings
Storage Server : Storage Server 1
Normal Schedule
Special Day Schedule
Monday
Tuesday
Wednesday
Shopping Mall
Checkout Area
Save Schedule
Discard Changes
Storage and Camera Server Summary
Storage Servers
Locations / Zones
Add Location
Add Zone
Shopping Center
Front Entrance
1st Floor
2nd Floor
3rd Floor
4th Floor
Carpark
Lifts
Outside Cameras
Warehouse
Shopping Mall
Checkout Area
Find Camera Servers
Add Camera Server
Edit Camera Server
Remove Camera Server
Display Camera List Summary
Save Changes
Discard Changes
WebView Livescope
Network Video Recorder
VK-64 v2.1
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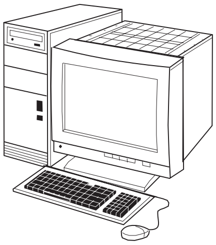
Status of camera servers at Location : **Shopping Mall**

Camera Server	Storage Server	Type	Recording Mode	Status	Resolution
Information	Storage Server 1	Canon VB....	Record	Recording : 0.008Mbps	320x240
Register #1	Storage Server 1	Canon VB....	Motion	Recording : 0.232Mbps	320x240
Register #2	Storage Server 1	Canon VB....	Record + Motion +...	Recording : 0.800Mbps	320x240
Level 1 Office	Storage Server 1	Canon VB....	Sensor	Idle	
Front Entrance	Storage Server 1	Canon VB....	Record + Motion	Recording : 0.768Mbps	320x240
Shop Front	Storage Server 1	Canon VB....	Motion	Monitoring	320x240
Store Room	Storage Server 1	Canon VB....	None	Idle	
Register #3	Storage Server 1	Canon VB....	Sensor	Monitoring	320x240
Outside Pool	Storage Server 1	Canon VB....	None	Idle	
Finance Room	Storage Server 1	Canon VB....	None	Idle	

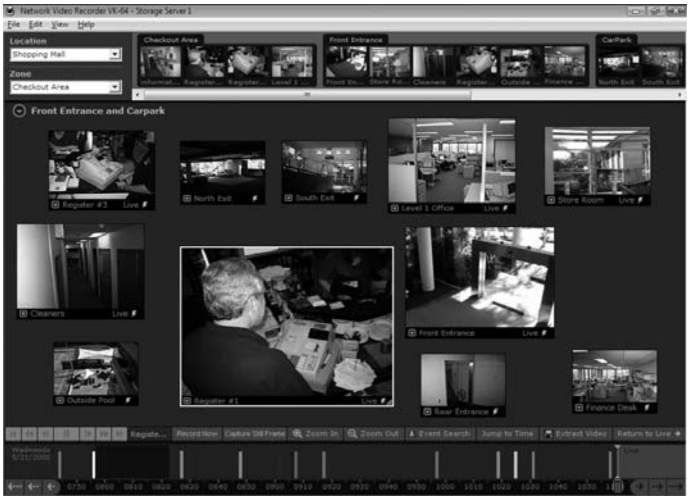
Step4 Create and save Viewer Layout

Monitoring live video and playing back recorded events can be done by the Viewer application. And also you can customize the Viewing Area and save Layouts.



Recorded video from
Storage Server

Live video from
Camera Servers


Network Video Recorder VK-64 - Storage Server 1
File Edit View Help
Location
Shopping Mall
Zone
Checkout Area
Checkout Area
Front Entrance
CarPark
Front Entrance and Carpark
Register #3
North Exit
South Exit
Level 1 Office
Store Room
Cleaners
Front Entrance
Outside Pool
Register #1
Rear Entrance
Finance Desk
Live
Record Now
Capture Still Frame
Zoom In
Zoom Out
Event Search
Jump to Time
Extract Video
Return to Live

VK-64/VK-16 Overview

Network Video Recorder

Network Video Recorder is software for viewing video, recording video and audio, and playing back video from multiple network cameras (hereafter referred to as **Camera Servers**). This supports viewing and recording JPEG and MPEG-4 video, bidirectional audio communication, and recording audio.

Composition of Network Video Recorder

Network Video Recorder consists of two software component: a Storage Server and a Viewer.

The Storage Server can record video from multiple Camera Servers, and can also record event information from motion detection and external device inputs. The Viewers can show the live video from multiple Camera Servers, and playback video recordings saved on a Storage Server.

Product Type

Number of Camera Servers Used

Product Name	Storage Server	Viewer
Network Video Recorder VK-64 v2.1	1 license	1 license
Network Video Recorder VK-16 v2.1	1 license	1 license
Network Video Recorder VK-64 v2.1 Viewer	-	1 license
Network Video Recorder VK-16 v2.1 5 Viewers	-	5 licenses

Network Video Recorder VK-64

Network Video Recorder VK-64 (hereafter referred to as **VK-64**) can register and use up to a maximum of 64 Camera Servers.

Network Video Recorder VK-16

Network Video Recorder VK-16 (hereafter referred to as **VK-16**) has the same basic functionality as VK-64, but is only able to register up to 16 Camera Servers.
A comparison between VK-64 and VK-16 is as follows.

Type	Storage Server	Viewer
VK-64	Maximum number of registered Camera Servers: 64 units	Same
VK-16	Maximum number of registered Camera Servers: 16 units All other functions are the same as the VK-64	

* The Viewer for VK-64 and VK-16 is the same.

VK-64 Viewer (Using the Viewer Only)

If you want to use additional Viewers, purchase the required number of viewer license. If you do not need to record video, the Viewer can be used in a standalone configuration.

You can perform live viewing and camera control of up to 64 units (cannot use functions such as recording and playback, display event information from motion detection and external device inputs, or still frames).

Upgrading from a Previous Version

To upgrade from an older version (v1.1, v1.2, v1.3, v1.4, or v2.0) to v2.1, download the free patch install from our website. License keys from older versions can also be valid in v2.1.

Network Video Recorder VK-Lite

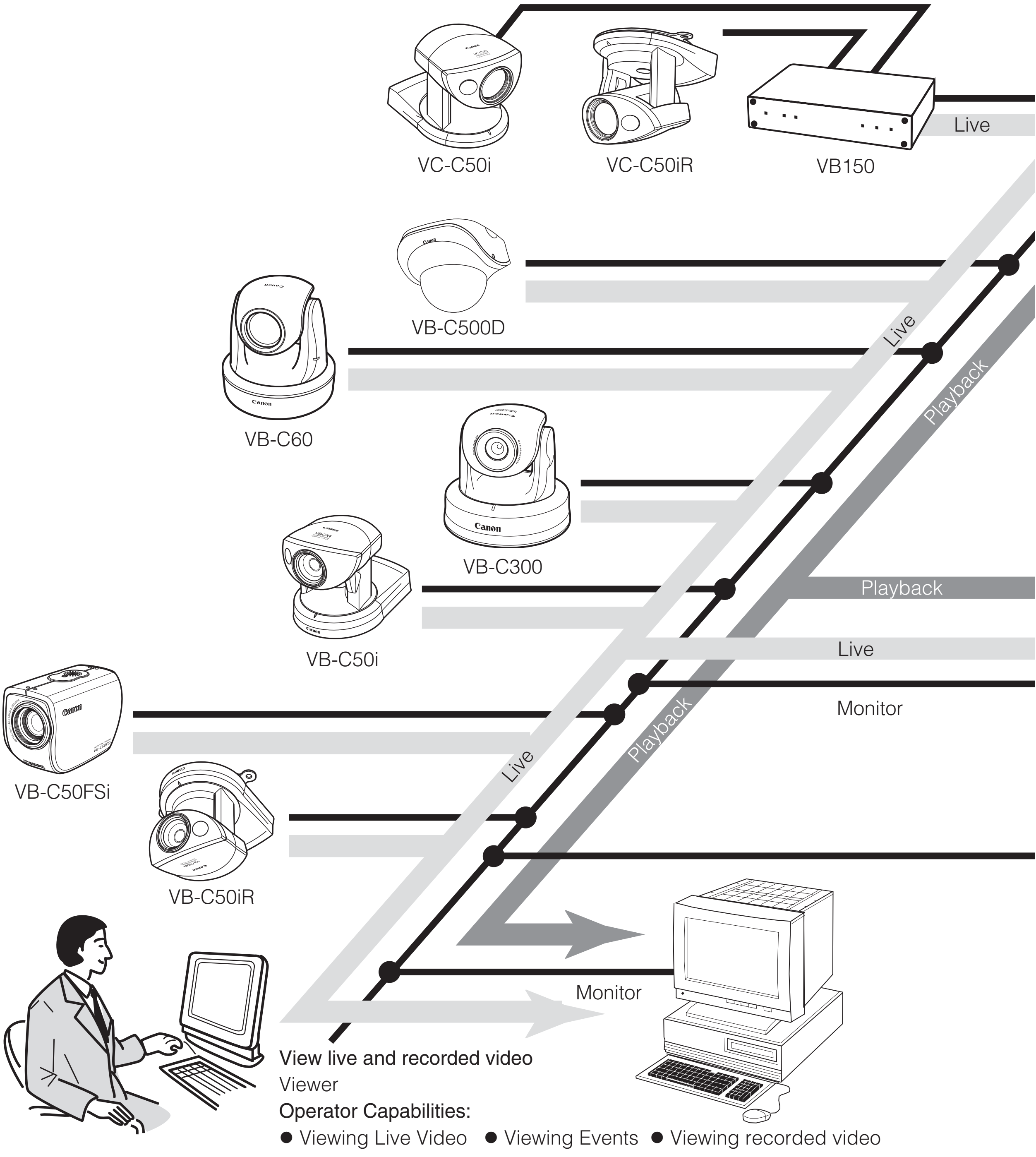
The Network Video Recorder VK-Lite which is bundled with the VB-C500D/VB-C60 is a simplified version of VK-64/VK-16. VK-Lite can display video, record video and audio, and playback for up to 4 Camera Servers.

Communication Mechanism of VK-64/VK-16

The following explains the communication mechanism of the VK-64/VK-16, with using atypical system configuration.

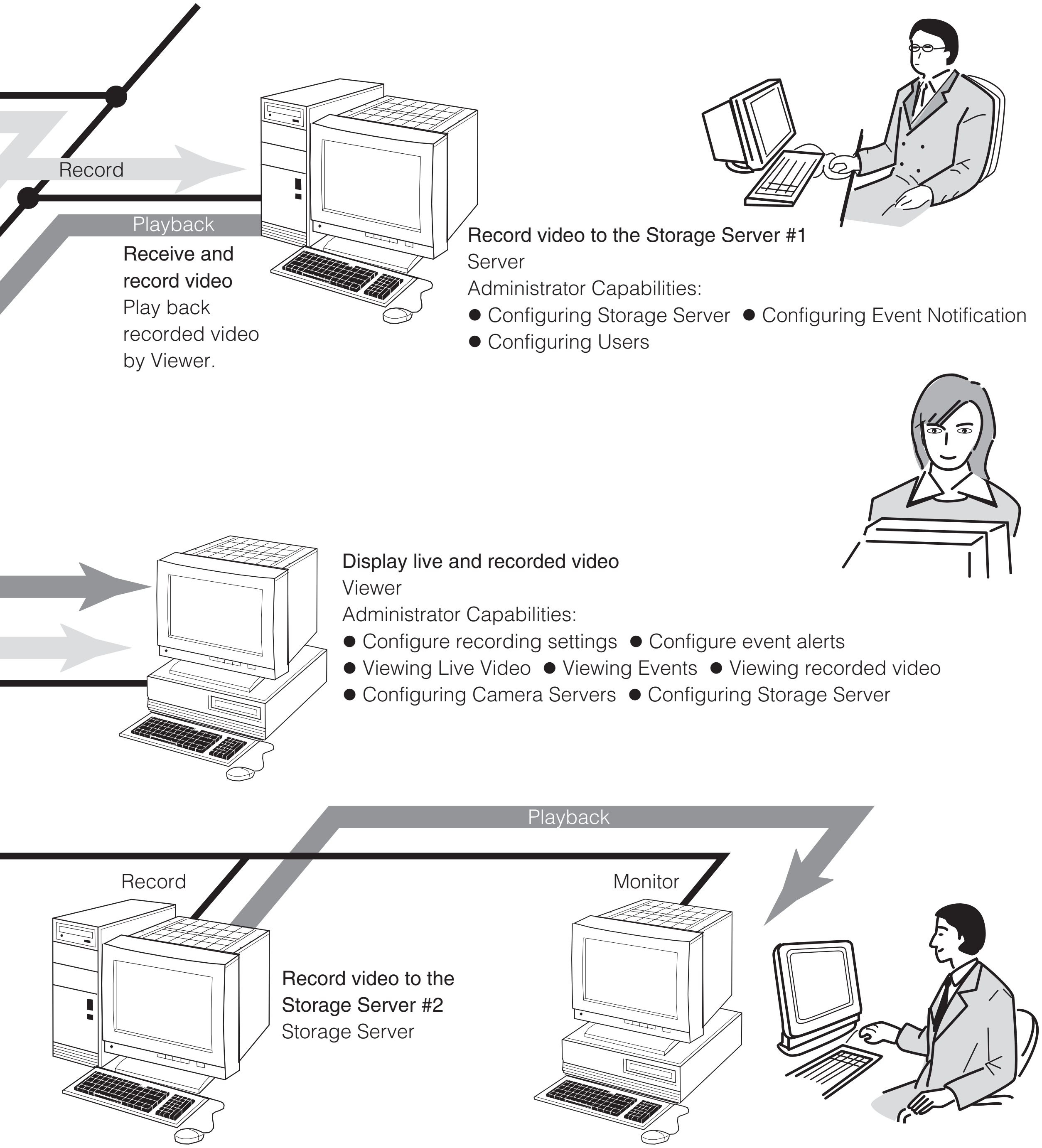
Typical System Configuration

VK-64/VK-16 provides video viewing and recording from Camera Servers via an IP network such as a LAN. Since VK-64/VK-16 makes use of IP networks, cameras can be installed easily. And also addition of new camera or change of camera location can be done flexibly.


VC-C50i
VC-C50iR
VB150
Live
VB-C500D
VB-C60
Live
Playback
VB-C300
Playback
VB-C50i
Live
Monitor
VB-C50FSi
Playback
Live
VB-C50iR
Monitor
View live and recorded video
Viewer
Operator Capabilities:
● Viewing Live Video ● Viewing Events ● Viewing recorded video

Application Types and Functions

Application	Function
Storage Server	Save logs information of such as video, audio, and events.
Viewer	User can view recorded information, monitor live-video and check and search events from recording server. Administrator can configure the strage server setting.



Receive and record video
Play back recorded video by Viewer.

Record video to the Storage Server #1
Server
Administrator Capabilities:
- Configuring Storage Server
- Configuring Event Notification
- Configuring Users

Display live and recorded video
Viewer
Administrator Capabilities:
- Configure recording settings
- Configure event alerts
- Viewing Live Video
- Viewing Events
- Viewing recorded video
- Configuring Camera Servers
- Configuring Storage Server

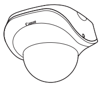
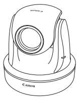
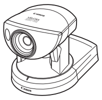
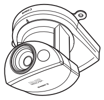
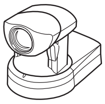
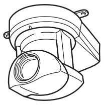
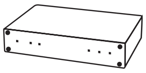
Record video to the Storage Server #2
Storage Server

Operating Environment

Supported Camera Servers

The table below shows the Camera Servers supported by VK-64/VK-16.

This information is as of January 2009. For the latest information, please access to Canon Web site.

Camera Server	Firmware Versions
VB-C500D 	Ver. 1.0 0
VB-C60 	Ver. 1.0 0 or later
VB-C300	Ver. 1.0 Rev. 02 or later Ver. 1.1 Rev. 0 or later
VB-C50i  VB-C50iR 	Ver. 1.2 Rev. 77 or later
VB-C50FSi	Ver. 1.0 Rev. 77 or later
VB-C50Fi	Ver. 1.0 Rev. 77 or later
VB-C10  VB-C10R 	Ver. 1.0 Rev. 26 or later
VB150 	Ver. 1.1 Rev. 41 or later

Note

- If using VB150 with multiple cameras, there are restrictions on frame rate.
  See your VB150 User's Manual for details (→ P. 1-24).
- This version of the Storage Server and Viewer do not support IPv6. Operate VB-C60 and VB-C500D using IPv4.
- The VB-C10, VB-C10R, and VB150 are not supported by VK-Lite.

System Environment

This information is as of January 2009. For the latest information, please access to Canon Web site.

Viewer

	Minimum Configuration
CPU	Pentium 4 2.2GHz or faster (Pentium4 3.4GHz or higher when using MPEG-4)
Operating System	Windows XP Professional (SP2, SP3) Windows Server 2003 Standard Edition (SP2) Windows Server 2003 R2 Standard Edition (SP2) Windows Vista Business/Enterprise/Ultimate (SP1) Windows Server 2008 Standard Edition
Memory	1GB or more
Hard Disk	2GB or more
Display	1024 x 768 or higher resolution for the effective display area Color display of 16 bits or more A high performance video card is recommended. In case of using PCI video cards, display performance may be reduced.
Sound	Audio playback support is necessary for event notification alert sounds (→ P. 5-15).

* VK-Lite also supports Windows Vista Home Premium.

* Only 32-bit Edition of Windows XP and Windows Server 2003 are supported.

* 32-bit Edition/64-bit Edition of Windows Vista are supported.

* 32-bit Edition/64-bit Edition of Windows Server 2008 are supported.

Storage Server

	Minimum Configuration
CPU	Pentium 4 2.2GHz or faster (Pentium4 3.4GHz or higher when using MPEG-4)
Operating System	Windows XP Professional (SP2, SP3) Windows Server 2003 Standard Edition (SP2) Windows Server 2003 R2 Standard Edition (SP2) Windows Vista Business/Enterprise/Ultimate (SP1) Windows Server 2008 Standard Edition
Memory	1GB RAM or more For using more than 48 Camera Servers, 1.5GB or more required.
Hard Disk	20GB HDD or more, SCSI or IDE, NTFS formatted

* The requirements for Storage Server will vary due to the operating environment (number of Camera Servers, setting of recording frame rate etc.). It is also dependent on pre-event recording settings.
Please contact dealers that handle Canon products for further information.

* VK-Lite also supports Windows Vista Home Premium.

* Only 32-bit Edition of Windows XP and Windows Server 2003 are supported.

* 32-bit Edition/64-bit Edition of Windows Vista is supported.

* 32-bit Edition/64-bit Edition of Windows Server 2008 are supported.

Notes on Operating Environment

Windows XP

If your Storage Server is installed to the PC on Windows XP SP2 or SP3 and your viewer is installed to another PC, it is necessary to change your [**Windows firewall**] settings for Windows XP SP2 or SP3.

* The following setting is not required if you install the Storage Server and Viewer on the same PC.

After installation of the Storage Server:

1. **Click [Control Panel] from the Windows [Start] menu to launch the [Control Panel].**
2. **In [Control Panel], select [Windows Firewall]. If [Windows Firewall] is not shown, select [Security Center] and then select [Windows Firewall].**
3. **When the [Windows Firewall] dialog is shown, select the [Exception] tab and then click [Add Port].**
4. **In the [Add a Port] dialog, enter a name for the Storage Server, e.g., "**VK-64/VK-16 **Storage Server". And then enter the Port number as "80". Make sure the TCP protocol is selected and click [OK].**
5. **In the [Windows Firewall] dialog, your additional Storage Server is now listed. Make sure the check box is marked. Click [OK] to close the dialog.**

Setting is now complete.

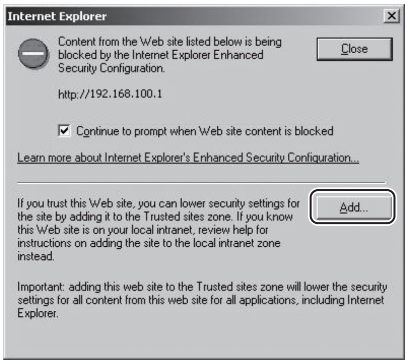
If more than ten Camera Servers out of all registered ones cannot be connected to Storage Servers, recording operations may take longer.

Windows Server 2003/Windows Server 2008

The default setting of security level of Windows Server 2003/Windows Server 2008 for the Internet or intranet sites in Internet Explorer is [**High**].

Therefore, a content block dialog box is displayed when you access pages such as the camera server's top page or setting page, and commands cannot be carried out. To ensure normal operation, carry out the procedure below to register the site as a trusted site.

1. **When you access the Camera Server top page using Internet Explorer, the dialog box shown at below appears.**



Content from the Web site listed below is being blocked by the Internet Explorer Enhanced Security Configuration.

http://192.168.100.1

☑ Continue to prompt when Web site content is blocked

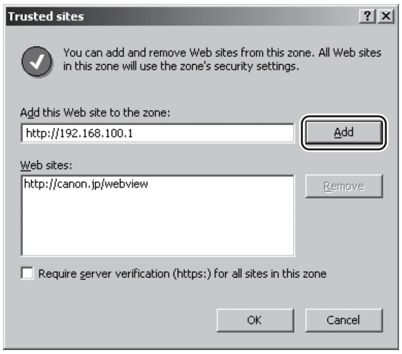
Learn more about Internet Explorer's Enhanced Security Configuration...

If you trust this Web site, you can lower security settings for the site by adding it to the Trusted sites zone. If you know this Web site is on your local intranet, review help for instructions on adding the site to the local intranet zone instead.

Important: adding this web site to the Trusted sites zone will lower the security settings for all content from this web site for all applications, including Internet Explorer.

2. **Click [Add], and then the [Trusted sites] dialog box appears.**

   If [**Require server verification (https:) for all sites in this zone**] is selected, clear the selection.



Trusted sites

You can add and remove Web sites from this zone. All Web sites in this zone will use the zone's security settings.

Add this Web site to the zone: http://192.168.100.1

Web sites: http://canon.jp/webview

☐ Require server verification (https:) for all sites in this zone

3. **Check that the IP address of your camera server displayed in the [Add this Web site to the zone] box is correct, and then click [Add] to register the camera as a trusted site.**

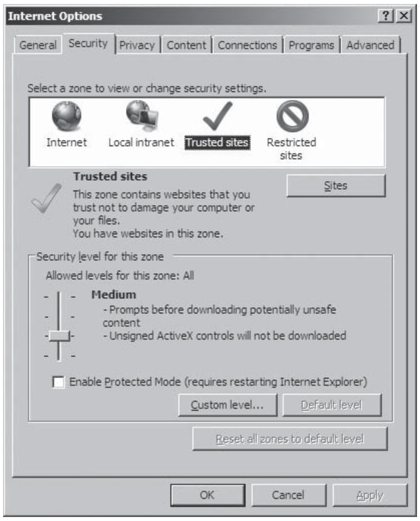
   For more information on registration to the trusted sites, click [**Learn more about Internet Explorer's Enhanced Security Configuration**] in the dialog box shown in step 1 and see the summary provided.

If you have enabled the [**Windows Firewall**] settings, please see the "Windows XP" (→ P. 1-12) and follow the instructions.

Additionally, even when a content block dialog box is not displayed, JavaScript may be disabled under standard security settings, limiting the available operations in the camera's settings page or the VB-C500 Viewer. JavaScript will be enabled automatically once trusted site registration is complete, so please carry out registration.

If the content block dialog box is not displayed, you can use the procedure below to display the dialog box for adding a trusted site.

1. **On the [Tools] menu in Internet Explorer, click [Internet Options] to display the [Internet Options] dialog box.**
2. **Next, click the [Security] tab.**
3. **Select [Trusted Sites], and click the [Sites] button.**



Internet Options

Select a zone to view or change security settings.

Trusted sites

This zone contains websites that you trust not to damage your computer or your files.
You have websites in this zone.

Security level for this zone

Allowed levels for this zone: All

Medium
- Prompts before downloading potentially unsafe content
- Unsigned ActiveX controls will not be downloaded

☐ Enable Protected Mode (requires restarting Internet Explorer)

Settings for registering Trusted sites are now complete.

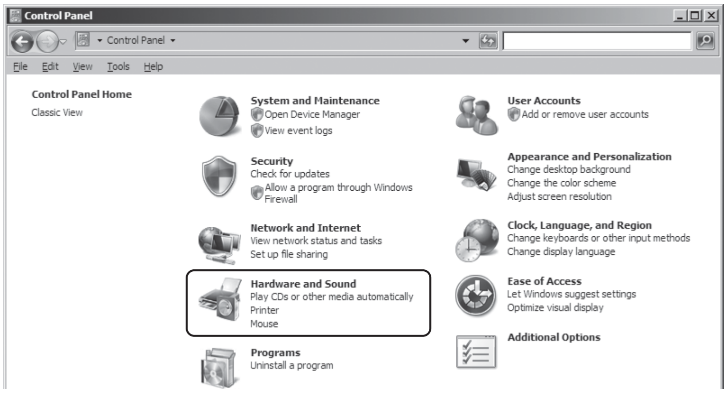
Windows Server 2008

Enable Sound to Use Audio Functions

The sound function is disabled by default in Windows Server 2008.

To receive audio signals using the VB-C500 Viewer, follow the procedure below to enable sound function.

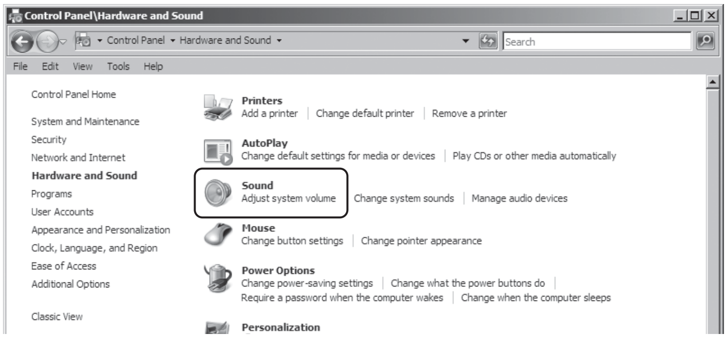
1. In the [Control Panel], click [Hardware and Sound].


Control Panel
Control Panel
File Edit View Tools Help
Control Panel Home
Classic View
System and Maintenance
Open Device Manager
View event logs
User Accounts
Add or remove user accounts
Security
Check for updates
Allow a program through Windows Firewall
Appearance and Personalization
Change desktop background
Change the color scheme
Adjust screen resolution
Network and Internet
View network status and tasks
Set up file sharing
Clock, Language, and Region
Change keyboards or other input methods
Change display language
Hardware and Sound
Play CDs or other media automatically
Printer
Mouse
Ease of Access
Let Windows suggest settings
Optimize visual display
Programs
Uninstall a program
Additional Options

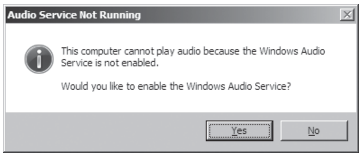
Note

If the [**Control Panel**] is set to [**Classic View**], double click [**Sound**].

2. Next, click [Sound].


Control Panel\Hardware and Sound
Control Panel ▸ Hardware and Sound
Search
File Edit View Tools Help
Control Panel Home
System and Maintenance
Security
Network and Internet
Hardware and Sound
Programs
User Accounts
Appearance and Personalization
Clock, Language, and Region
Ease of Access
Additional Options
Classic View
Printers
Add a printer | Change default printer | Remove a printer
AutoPlay
Change default settings for media or devices | Play CDs or other media automatically
Sound
Adjust system volume | Change system sounds | Manage audio devices
Mouse
Change button settings | Change pointer appearance
Power Options
Change power-saving settings | Change what the power buttons do | Require a password when the computer wakes | Change when the computer sleeps
Personalization

3. The [Audio Service Not Running] dialog box is displayed. Click [OK].


Audio Service Not Running
Yes
No

This computer cannot play audio because the Windows Audio Service is not enabled.

Would you like to enable the Windows Audio Service?

4. Finally, the [Sound] dialog box is displayed. In the [Playback] tab, confirm that an audio device is installed. (If no audio device is installed, check the user manual for your computer.)

Windows Vista/Windows Server 2008

When using VK-64/VK-16 on Windows Vista Business/Enterprise/Ultimate/Windows Server 2008, pay attention to the following restrictions.

Upgrade your PC

Please note that before upgrading your PC to Windows Vista/Windows Server 2008, you need to upgrade this software to v2.1, if the version is older than v2.1.

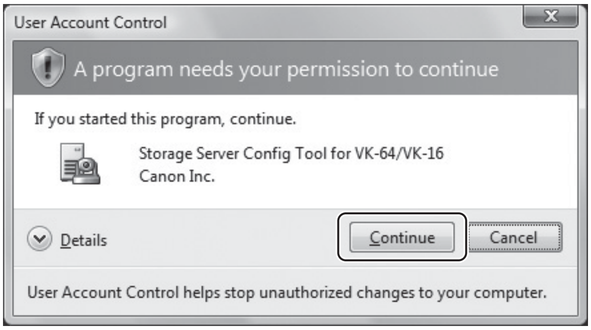
If you upgrade your PC to Windows Vista/Windows Server 2008 before upgrading the software to v2.1, you will not able to complete upgrade installation to v2.1. In this case, follow the procedure below.

1. Right click on the [Storage Server Configuration] icon on the desktop, then choose [Properties].
2. Click the [Compatibility] tab and check the [Run this program as an administrator] check box.
3. Double click the [Storage Server Configuration] icon to launch the Storage Server Configuration tool.
4. Click the [Stop Storage Server] button in the [Storage server status].
5. Click the [Retry] button on the installer wizard for VK version 2.1.

Warning dialog appeared when opening the Storage Server Configuration dialog

If User Account Control is enabled on Windows Vista/Windows Server 2008, the [User Account Control] dialog will appear when you launch the Storage Server Configuration tool.

Click the [Continue] button to launch the Storage Server Configuration tool.



User Account Control

A program needs your permission to continue

If you started this program, continue.

Storage Server Config Tool for VK-64/VK-16
Canon Inc.

User Account Control helps stop unauthorized changes to your computer.

Notes for when the Windows Firewall Function is Enabled

When the Windows Firewall function is enabled, carry out the same settings as in the Windows XP section of the Notes on Operating Environment.

Storage location of recorded video

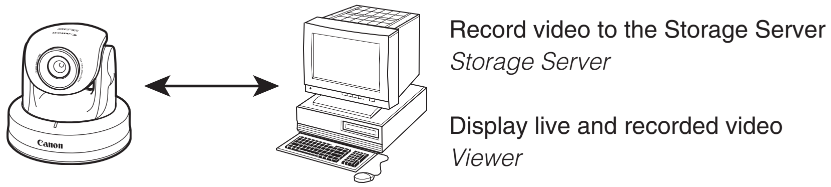
On Windows Vista/Windows Server 2008, snap shots and video files cannot be saved into the Windows folder or the Program Files folder on the system drive.

Shadow backup

You cannot use shadow backup of Windows Vista/Windows Server 2008. So, if once you delete a configuration file of VK-64/VK-16, you cannot restore the file with shadow backup.(→ P. 7-7)

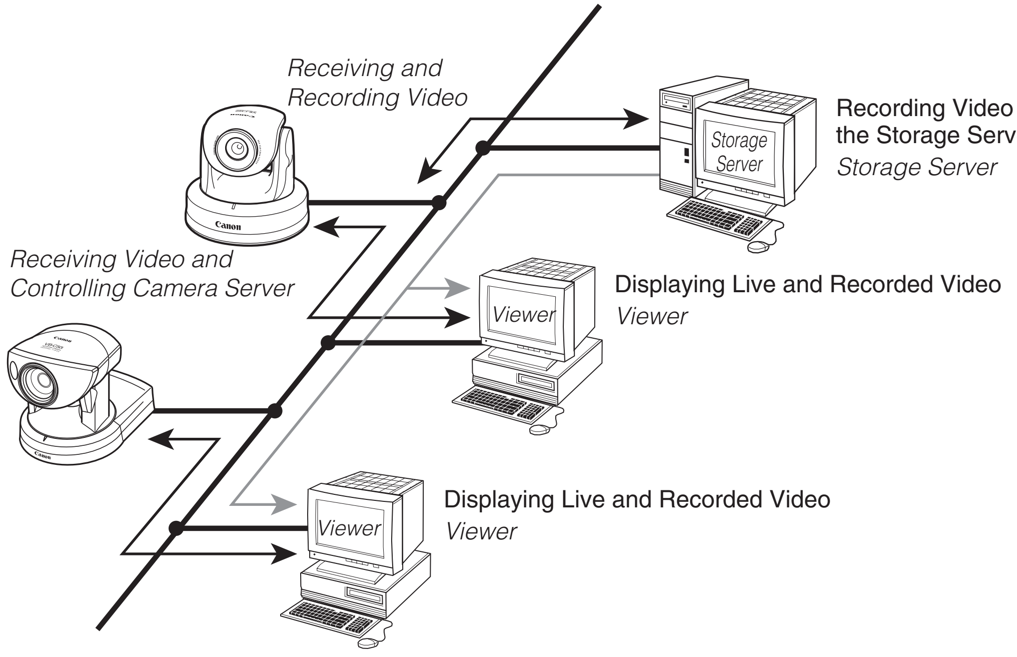
System Configuration Example

When Viewing and Recording with one PC


Canon
Record video to the Storage Server
Storage Server
Display live and recorded video
Viewer

Load on PC may increase depending on the number of camera servers and recording schedule. Consider your system configuration referring to "Server Sizing Concept" (→ P. 1-19).

When Viewing and Recording with one Storage Server and Multiple Viewers

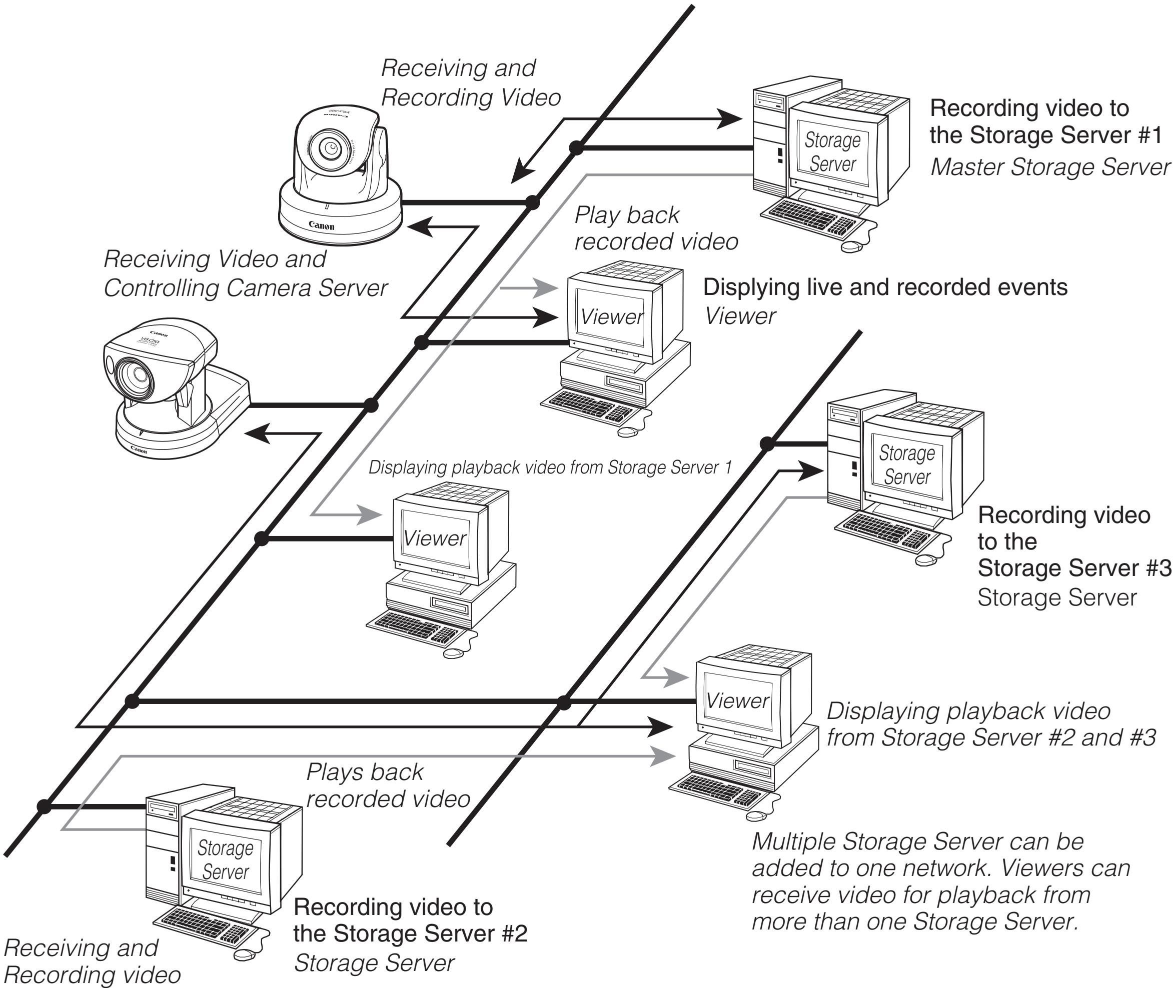

Receiving and
Recording Video
Storage
Server
Recording Video to
the Storage Server
Storage Server
Receiving Video and
Controlling Camera Server
Viewer
Displaying Live and Recorded Video
Viewer
Viewer
Displaying Live and Recorded Video
Viewer
Canon

Note

- If many Viewers accessing to the same Camera Servers and Storage Servers simultaneously, it will affect system performance.
- Installation of both Storage Server and Viewer on a single PC may cause a heavy load on your PC depending on the number of camera servers or recording schedule. If you use VK-64/VK-16 with many Camera Servers, install each application on different PCs. Viewing with a low capacity PC may take longer, the specified frame rate may not be achieved, recording frame rate may be lower, or recording may be interrupted (→ P. 1-20).

When using multiple Storage Servers and Viewers

One or more Storage Servers can be used on the same network and Viewer applications can be configured to play video from more than one Storage Server. For each Viewer, Master Storage Server (→ P. 1-18) needs to be specified for saving information such as zones and locations of cameras, as well as saving Viewer layouts created by the user.

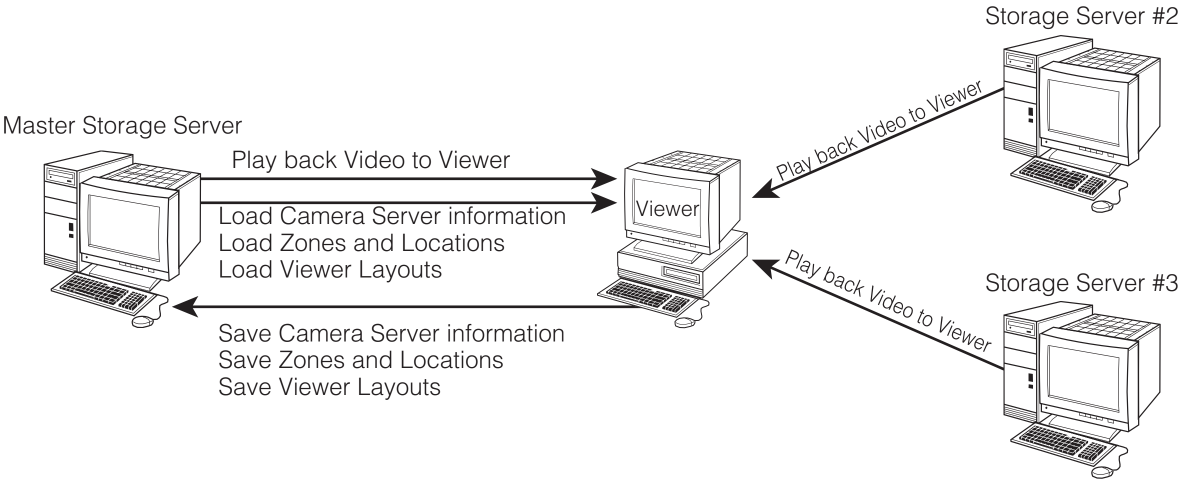

Receiving and
Recording Video
Recording video to
the Storage Server #1
Master Storage Server
Storage
Server
Play back
recorded video
Receiving Video and
Controlling Camera Server
Displying live and recorded events
Viewer
Viewer
Displaying playback video from Storage Server 1
Viewer
Storage
Server
Recording video
to the
Storage Server #3
Storage Server
Viewer
Displaying playback video
from Storage Server #2 and #3
Plays back
recorded video
Storage
Server
Multiple Storage Server can be
added to one network. Viewers can
receive video for playback from
more than one Storage Server.
Recording video to
the Storage Server #2
Storage Server
Receiving and
Recording video

Note

- You can operate VK-64/VK-16 with up to ten Storage Servers using any combination of VK-64 Storage Server and VK-16 Storage Server. Up to 192 Camera Servers can be operated.
- Up to 10 Viewers can be connected to a Storage Server at the same time.
- If the Storage Server and/or Viewer are installed on multiple PCs, you need to purchase the necessary license separately (→ P. 1-6).
- You can not use multiple Storage Servers with VK-Lite.

When using multiple Storage Servers

If multiple Storage Servers are being used, you should specify the Master Storage Server.
A typical multiple Storage Server arrangement is shown below.


Storage Server #2
Master Storage Server
Play back Video to Viewer
Load Camera Server information
Load Zones and Locations
Load Viewer Layouts
Viewer
Play back Video to Viewer
Play back Video to Viewer
Storage Server #3
Save Camera Server information
Save Zones and Locations
Save Viewer Layouts

A master storage server is a server, which viewers connect to in the first place. Master storage servers store information about camera servers, locations, zones and viewer layouts, which range over multiple storage servers. Viewers extract those information from a master storage server.

Note

- All of the Viewers within a system should use the same Storage Server as the Master Storage Server. This makes it possible to use the same Zones, Locations, and Viewer Layouts in all of the Viewers.
- Ensure if the Storage Server and Viewer installed to the PC is operated with correct daytime setting regularly. We recommend that you use NTP function to set the time for Storage Server automatically.
- Adjusting the time of Storage Server during recording may cause problems to the recording video.
- When multiple Storage Servers are operated, if the Storage Servers other than the Master Storage Server are stopped, it takes time to display the Configuration and Preferences screen (approximately up to 30 seconds).

When using Viewer alone

The Viewer can be used by itself without connecting to the Storage Server. Although there are some restrictions on functions such as recording and Event Search, Viewer-Only mode allows to view live videos.

Server Sizing Concept

Determine your server configuration (components and the number of units) depending on 1) required hard disk capacity and 2) video data volume per second.

1) Required hard disk capacity:	Consider the required hard disk capacity based on continuous recording with fixed frame rate, resolution, and quantity.
2) Video data volume per second:	If the video data volume per second by server exceeds values shown below, you should consider multiple servers or review the recording conditions.

Note

- Every operation environment of VK-64/VK-16 is different (due to different requirements and different hardware specifications) and the figures provided below are just for the reference.
- Data volume per drive should be less than 2TB.

Approximate Video Data Volume per Second

The recording performance of VK-64/VK-16 v2.1 is as follows.

- For dedicated Storage Server: Maximum amount of recorded data per server = 5.5 MB/sec or less (when using SCSI, SAS disk)

	VGA	QVGA
JPEG	110 fps	360 fps
MPEG-4	Total 44Mbit/sec.	

- For Storage and Playback Server: Maximum amount of recorded data per server = 3 MB/sec or less

	VGA	QVGA
JPEG	60 fps	200 fps
MPEG-4	Total 24Mbit/sec.	

Note

Data-writing performance may be reduced than the approximate values given above depending on the hard disk or the RAID card in the PC.

Required Hard Disk Capacity

The size of the images varies depending on the configuration of the Camera Server (the settings for Quality and Resolution) and the complexity of the actual image.

Determining Required Hard Disk Capacity

Determine the required hard disk capacity as follows.

1. **Determine the required number of Camera Servers and required video data size.**
2. **Select the Image Quality of each Camera Server.**

   The video quality improves in proportion to the set value, but the data volume also becomes larger.
3. **Determine the frame rate for recording video (i.e., the number of frames per second).**

   For general security purposes, 1 to 2 fps is common. Higher frame rate requires more hard disk space.
4. **Determine the recording period per day and duration to retain data.**
5. **After determining the conditions above, calculate the required hard disk capacity due to the video data size (in KB).**
6. **If you record audio, to calculate the amount of hard disk space required for the audio data. The data size for recording audio is 8 KB/s regardless of the type of Camera Server.**

When determining hard disk sizes it is important to take into account that there needs to be considered about 10 to 20% additional room.

Example 1: JPEG recording

- Using 16 Camera Servers (VB-C60) for recording,
- With each camera set to Medium Size for video data size and Image Quality set to 50 (data size per 1 frame: 15KB),
- Recording frame rate is set at 2 fps, and
- Data size per second is approximately 30 KB (= 15 KB x 2fps).
  Although actual data size depends on objects shot by each Camera Server, this calculation assumes the typical size shown above.
- Audio recording as also performed simultaneously on 2 of the Camera Servers.

For the above configuration, when JPEG images from 16 camera servers are being recorded continuously at 2 frames per second all day, every day, the required hard disk space is approximately 40GB per day (=30KB x 16 cameras x 60 seconds x 60 minutes x 24 hours = 41472000KB per day).

When audio is recorded by 2 camera server, the required hard disk space is approximately 1.3 GB per day (=8 KB x 2 units x 60 seconds x 60 minutes x 24 hours = 1382400 KB).

Example 2: MPEG-4 recording

- Using 8 Camera Servers (VB-C60) for recording,
- With each camera set to Medium Size (320 x 240) and Video Quality is set to 3,
- Recording frame rate is set at 30 fps, and
- Data size per second is approximately 30 KB.
  Although actual data size depends on objects shot by each Camera Server, this calculation assumes the typical size shown above.

For the above configuration, when MPEG-4 video from 8 Camera Servers are being recorded continuously at 30 fps all day, every day, the hard disk space required is approximately 40GB per day (=60KB x 8 cameras x 60 seconds x 60 minutes x 24 hours = 41472000KB per day).

* For the above figures please note that the bandwidth is calculated as 1000Kbps = 1Mbps, and the disk size as 1024KB = 1MB.

The following tables give some typical data sizes per frame (in kilobytes) for various combination of quality and resolution values referring to a VB-C500D, VB-C60, VB-C300 and VB-C50i.
However the actual data size may be different from the data size in the table below depending on the weather condition and complexity of the image. For example, images of an empty corridor would typically be smaller than these values and images of an intricate pattern such as a crowded shopping mall may be larger than these.

Example of frame size with VB-C500D/VB-C60* (JPEG)

Quality	Resolution		
	JPEG Small (160x120)	JPEG Medium (320x240)	JPEG Large (640x480)
1	4.0	13.0	40.7
2	4.6	15.3	47.1
3	5.2	17.4	53.2
4	6.8	22.9	69.4
5	18.5	65.2	210.5

(KB)

Example of bit rate with VB-C500D/VB-C60* (MPEG-4)

Quality	Resolution and Frame Rate					
	10fps		15fps		30fps	
	MPEG-4 Medium (320x240)	MPEG-4 Large (640x480)	MPEG-4 Medium (320x240)	MPEG-4 Large (640x480)	MPEG-4 Medium (320x240)	MPEG-4 Large (640x480)
1	0.28	0.76	0.35	0.94	0.54	1.43
2	0.39	1.08	0.50	1.30	0.78	2.02
3	0.60	1.67	0.75	2.02	1.20	3.31
4	0.69	1.93	0.91	2.43	1.38	3.98
5	0.81	2.31	1.05	2.87	1.68	4.86

(Mbps)

MPEG-4 data size may increase when recording the video of strenuous movement.

Example of frame size with VB-C300*

Quality	Resolution		
	JPEG Small (160x120)	JPEG Medium (320x240)	JPEG Large (640x480)
1	4.0	12.5	36.0
2	4.6	14.8	42.4
3	5.2	16.8	47.5
4	6.8	22.3	62.9
5	18.9	65.5	206.0

(KB)

Example of frame size with VB-C50i*

The data size of VB-C50iR and VB-C50FSi is the same as VB-C50i's.

Quality	Resolution		
	JPEG Small (160x120)	JPEG Medium (320x240)	JPEG Large (640x480)
30	4.0	12.4	39.4
40	4.7	14.8	46.2
50	5.3	16.7	51.7
60	6.0	18.9	58.4
70	7.0	22.3	68.2
80	8.6	27.5	84.5
90	11.9	38.7	124.8

(KB)

* All of the data in the previous page sizes are only rough guide, and may increase or decrease depending on the object being shot. Please be sure to confirm under the actual installation conditions before starting operations. Select [Video Information] from the [View] menu of the Viewer (bundled with the Camera Server) to check the data quantity per frame (VB-C300, VB-C50i, VB-C50iR, VB-C50FSi).

> **Note**
>
> Please note that data size may increase enormously when video quality is set to 100 with the VB-C50i, VB-C50iR, VB-C50FSi, VB-C50Fi.

The size of audio data is 8 KB/s.

Sensor Event Recording and Motion Detection Recording Concept

Notes on Sensor Event Recording and Motion Detection Recording

- When an event, such as sensor input or motion detection, occurs, video data will be stored in the Storage Server as an operation record.
- As the number of stored operation records increased, the operation and search speed at event detection and response speed of viewers may be affected.

Notes on Motion Detection Recording

- The Motion Detection function detects motion where no motion occured before.

  Do not use this function where the motion detection may operate too frequently, e.g., where many people pass through.
- Motion detection shoud be set on the Camera Server. If motion detection is set on the Storage Server, the processing load on the PC will increase, and this may have an effect on the storage performance. (except VB-C300)

> **Tip**
>
> See "Operational Guideline for Sensor Event Recording" (→ P. 6-6) and "Optimization of Motion Detection Recording (Index)" (→ P. 6-7) for details.

Storage Server Performance

<Case 1: in JPEG>	<Case 2: in JPEG>
Camera Servers: 24 units of VB-C60 Resolution: High (640 x 480) Quality: 3 Frame Rate: 10 fps	Camera Servers: 48 units of VB-C60 Resolution: Medium (320 x 240) Quality: 3 Frame Rate: 1 fps
[Recording] Example of Storage Server PC specifications CPU: Pentium 4 3GHz Memory: 1GB HDD: Please see "Important: Disk Space Management" (→ P. 3-17) (Sample specifications for 3-day storage: about 1.1 TB for each Storage Server) Three Storage Servers with the above PC specifications (one master Server, two slave Servers)	[Recording] Example of Storage Server PC specifications CPU: Pentium 4 3GHz Memory: 1GB HDD: Please see "Important: Disk Space Management" (→ P. 3-17) (Sample specifications for 14-day storage: about 900 GB) One Storage Server with the above PC specifications
[Live View, Recorded Video Playback] Example of Viewer PC specifications CPU: Pentium 4 3.8GHz Memory: 1GB Video graphics board: NVIDIA Quadro FX 1400	[Live View, Recorded Video Playback] Example of Viewer PC specifications CPU: Pentium 4 3.0GHz Memory: 1GB Video Graphics Board: On-chip board

Note

- These data above are rough guide. As many factors can influence the actual performance possible (including networking equipment, disk write speed, complexity of camera image, etc), the actual performance of VK-64/VK-16 recording in a specific installation will vary. Please be sure to confirm under the actual installation conditions before starting operations.
- If there are many registered Camera Servers, it is recommended that you use two or more PCs or configure to use the Layout frequency.

Notes on Storage Server Operation

It is recommended to use the Storage Server exclusively for the VK-64/VK-16.

Be sure to avoid the following forms of operation.

- Using the Storage Server with a Web Server

  As Storage Server, you cannot use a PC where Web server software such as Windows standard IIS (Internet Information Server) or Apache has been already installed.

  Since the Storage Server uses the HTTP protocol to communicate with the Camera Server, therefore it may not work properly if other Web applications exist on the same platform.

  The HTTP port number used by the VK-64/VK-16 shoud be fixed to "80".

- Using the Storage Server with a Database Server (e.g., SQL Server, Oracle)

  If the hard disk is heavily loaded in database processing, recording may not work normally. Conversely, the database server may be affected by the VK-64/VK-16 when it need hard disk performance to complete its task.

- Using the Storage Server with a File Server

  Accesses to the hard disk may be too frequent and recording may not work normally. Also, the disk capacity for the VK-64/VK-16 may run short.

- Using the Storage Server with other applications

  The processing load of other applications may have a negative effect on the storage performance.

Notes on Viewer Sizing

Consider the following points when selecting the PC for viewer (installed).

- Live-video viewing and recorded vidoe playback performance of the VK-64/VK-16 largely depends on the CPU and graphics board performance on the PC. The CPU performance affects image capturing and video data generation, and the graphics board performance affects image drawing.

See the following example when selecting the PC for the viewer installed.

In this example, the OS is Windows XP Professional.

1. CPU: Pentium4 3.0GHz, memory: 1GB, graphics board: Quadro FX570
   When using the VB-C60 with Resolution=340 x 240 and Quality=3:
   Total frame rate:
   JPEG image---Max. 220 fps
   MPEG-4 video---Max. 180 fps

2. CPU: Pentium4 3.6GHz, memory: 1GB, graphics board: Quadro FX1700
   When using the VB-C60 with Resolution=340 x 240 and Quality=3:
   Total frame rate:
   JPEG image---Max. 260 fps
   MPEG-4 video---Max. 210 fps

3. CPU: Pentium4 3.8GHz, memory: 1GB, graphics board: Quadro FX1700
   When using the VB-C60 with Resolution=340 x 240 and Quality=3:
   Total frame rate:
   JPEG image---Max. 280 fps
   MPEG-4 video---Max. 240 fps

Tip

- The total frame rate is calculated as: Number of Camera Servers in the Viewer window x Frame rate. That means, with 10 Camera Servers and 10 fps frame rate, the total frame rate is 100 fps.
- Note that the total frame rate above varies depending on the combination of the PC and graphics board. It is also affected by other applications (e.g., anti-virus application) running on the same PC.
- When displaying MPEG-4 video in VGA, the maximum frame rates are the one-forth of the above frame rates.

Network Bandwidth Concept

You should consider the network bandwidth when recording video or viewing live video from the network camera.

The network bandwidths should be calculated separately for recording and live viewing.

Example:
With one recording server (QVGA, 1 fps) and two live viewing servers (QVGA, 5 fps):

- Bandwidth for recording

  15 (KB/frame) x 1 (frame/sec) x 8 (bits) = 120 Kbps

- Bandwidth for live viewing (per server)

  15 (KB/frame) x 5 (frame/sec) x 8 (bits) = 600 Kbps

Therefore, required network bandwidth is calculated as follows:

120 Kbps x 1 + 600 Kbps x 2 = 1320 Kbps = Approx. 1.3 Mbps

Note that the line speed unit is bps (bits per second).

VK-Lite

VK-Lite is bundled with VB-C500D and VB-C60. This is a simplified version of the Network Video Recorder VK-64/VK-16. The differences in functionality between the VK-64/VK-16 and VK-Lite product versions are summarized below.

Functional Limitations in VK-Lite

- The maximum number of cameras that can be registered is 4 units.
- It is recommended that 8 or less video windows are displayed in the Viewer Window (a warning is displayed if 9 or more video windows are displayed).
- The maximum frame rate is as follows.

Video recording	5 fps or less (JPEG)
Record now	Fixed at 5 fps

- The reduce frame rate under high load is fixed on.
- The maximum file size is fixed at 1 GB per day, and cannot be changed.
- The supported cameras are as follows.

  VB-C500D, VB-C60, VB-C300, VB-C50i, VB-C50iR, VB-C50Fi, and VB-C50FSi
- The VK-Lite Viewer cannot connect to VK-64/VK-16 Storage Server.
- The VK-64/VK-16 Viewer can connect to VK-Lite Storage Server.

  However, older versions of the VK-64/VK-16 Viewer cannot connect to VK-Lite Storage Server.

Note

- You cannot connect to the following cameras.
  VB-C10, VB-C10R, VB150

Functions that cannot be used in VK-Lite

- Storage Server
  - Recording to NAS
  - MPEG-4 recording
  - Motion detection recording
  - Sensor recording
  - A Special day recording
  - Send mail on event function
  - Customization of event priority
  - Connection via HTTP proxy
  - Remote trigger
- VK Viewer
  - Layout frequency
  - Simultaneous monitoring of multiple storage servers
  - Designated schedules
  - Connection via HTTP proxy
  - Registration of slave storage servers
  - Viewer control API

> **Tip**
>
> Functions that cannot be used with the VK-Lite Viewer or VK-Lite Server are indicated by the following marking in the text.
>
> **VK-64/16**

Other

- Windows Vista Home Premium is also supported in addition to the VK-64/VK-16 system environments (→ P. 1-10).
- It is possible to upgrade VK-Lite to VK-64/VK-16.

Specification Comparison of VK-64/VK-16 and VK-Lite

This section explains what you need to know before using the VK-64/VK-16, and the required operating environment and considerations when designing a system.

Type	Main functional limitaions	VK-64/VK-16 v2.0	VK-Lite v2.0
Camera server connection	Max. number of camera servers	64 / 16	4
	Available camera servers	VB-C500D, VB-C60, VB-C300, VB-C50 series, VB-C10/R, VB150	VB-C500D, VB-C60, VB-C300, VB-C50 series
	Automatic camera server search	✔	✔
Storage Server	Recording format	JPEG, MPEG-4	JPEG only
	Max. recording frame rate	30 fps[*1]	5 fps
	Video recording mode	Normal Schedule recording (Continuous recording, Sensor event recording, Motion detection recording) Special Day Schedule recording Manual recording	Normal Schedule recording (Continuous recording) Manual recording
	Max. file size setting	available 32~1024MB, 1~24 hours	Fixed 1GB/day (1024MB)
	Max. retained history of recorded video	999 weeks[*1]	12 weeks (90 days)
	Audio recording / playback	✔	✔
	Recording to NAS servers	✔	–
	Other functional limitations	–	Following functions are unavailable. ● Sending mail when an event occurs ● Customizing priorities of events ● Connection via HTTP proxy ● Remote trigger
Viewer	Live video format	JPEG, MPEG-4	JPEG, MPEG-4
	Max. displaying frame rate	30 fps[*1]	30 fps[*1]
	Max. number of video windows on the viewer	Unlimited*1	8 or less is recommended.
	Two-way audio	✔	✔
	Registration of multiple storage servers[*2]	✔	–
	Layout Sequences[*3]	✔	–
	Other functional limitations	–	Following function is unavailable. ● Connection via HTTP proxy

*1 Operational limits apply depending on the number of cameras, the PC performance and hard disk capacity, and the amount of network traffic.

*2 In case of using VK-64/VK-16 with multiple storage servers, you can unify management of cameras registered to each storage server and the recorded data, if you set one master storage server. When connecting to each storage server using VK-Lite viewer, you need to switch connection one by one.

*3 Layout Sequences is a function to switch displayed viewer windows at set intervals.

2

Installation

Chapter Overview

This chapter explains how to install VK-64/VK-16.

Setting up the Camera Servers

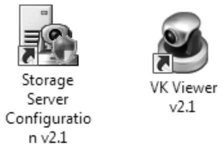
Firstly set up Camera Server. For connection in detail, see the manual for Camera Server.

Install the Storage Server and Viewer

Note

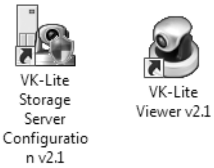
Before the installation, read Chapter 1 and "Preparation and Precaution" (→ P. 2-7) carefully.

When you install VK-64/VK-16, icons for two applications composing VK-64/VK-16 is created on the desktop.


Storage Server Configuration v2.1
VK Viewer v2.1

Tip

- See Chapter 3 for how to use the Storage Server.
- See Chapter 4 for how to use VK Viewer.
- The following icons are displayed if VK-Lite is installed.


VK-Lite Storage Server Configuration v2.1
VK-Lite Viewer v2.1

Installation Procedures

Note

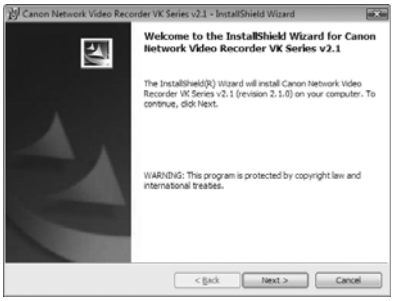
- Types and number of license has been determined for VK-64 and VK-16. If you want to add the Storage Server or Viewer, you need to purchase necessary software (→ P. 1-6).
- The hard disk where the software will be installed should be formatted in the NTFS (→ P. 2-7).

Start up the Installer

1. To start installing VK-64/VK-16, insert the installation CD-ROM into the CD drive, and then the [Welcome] screen appears. Click [Next] to continue.

   If the installer does not automatically launch, open the CD-ROM directory in Explorer and double-click v21setup.exe. Then, installation process starts.

   To start installing VK-Lite, double-click VKLiteInstall.exe in the VBTools folder on the VB-C500D/VB-C60 Setup CD-ROM.



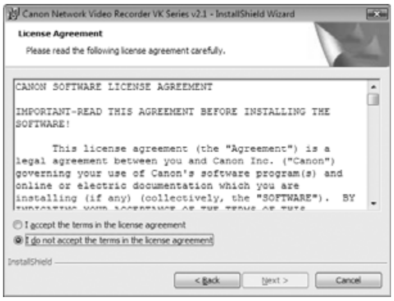
Canon Network Video Recorder VK Series v2.1 - InstallShield Wizard

Welcome to the InstallShield Wizard for Canon Network Video Recorder VK Series v2.1

The InstallShield(R) Wizard will install Canon Network Video Recorder VK Series v2.1 (revision 2.1.0) on your computer. To continue, click Next.

WARNING: This program is protected by copyright law and international treaties.

2. The [Software License Agreement] screen appears. Read the agreement carefully.
   Click the radio button, [I accept the terms in the license agreement] and then click [Next] to continue.



Canon Network Video Recorder VK Series v2.1 - InstallShield Wizard

License Agreement

Please read the following license agreement carefully.

CANON SOFTWARE LICENSE AGREEMENT

IMPORTANT-READ THIS AGREEMENT BEFORE INSTALLING THE SOFTWARE!

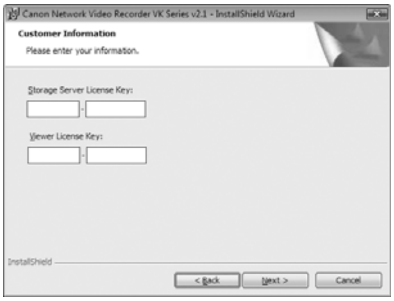
This license agreement (the "Agreement") is a legal agreement between you and Canon Inc. ("Canon") governing your use of Canon's software program(s) and online or electric documentation which you are installing (if any) (collectively, the "SOFTWARE"). BY

○ I accept the terms in the license agreement

● I do not accept the terms in the license agreement

3. Enter your License Key(s) and click [Next] to install VK-64/VK-16. Your License Key is indicated on the "About License Key" included in the package.

   * VK-Lite that comes with VB-C500D and VB-C60 has a license for one Storage Server and one Viewer.



Canon Network Video Recorder VK Series v2.1 - InstallShield Wizard

Customer Information

Please enter your information.

Storage Server License Key:

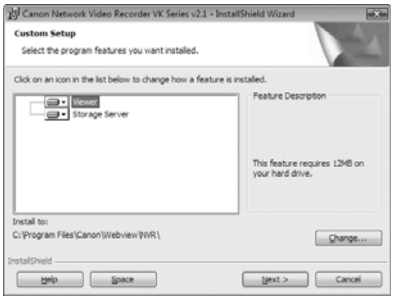
Viewer License Key:

Tip

No License Key registration window appears for VK-Lite installation.

4. Depending on your entered License Key for VK-64/VK-16, one or both of the following applications shown below:

   - Viewer
   - Storage Server



Canon Network Video Recorder VK Series v2.1 - InstallShield Wizard

Custom Setup

Select the program features you want installed.

Click on an icon in the list below to change how a feature is installed.

Feature Description

This feature requires 12MB on your hard drive.

Install to:

C:\Program Files\Canon\Webview\NVR\

Tip

You cannot change the application to be installed in this window. To change the application, you need to go back to the registration window and enter the license key again.

For VK-Lite, both of the following applications are installed.

- Viewer
- Storage Server

When you need to install either one of the above, right-click on the application icon which you will not install, and choose [**This feature will not be available**].

It is recommended not to change the designated installation directory. Click [**Change**] to choose another installation path if necessary, and then select the directory to install the software.

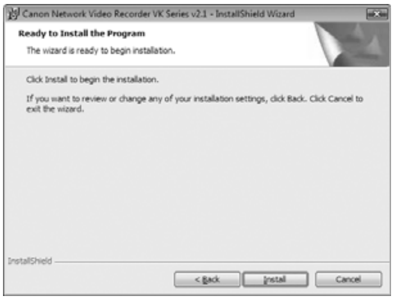
Click [**Next**] to continue.

Tip

Click [**Space**] and then a list of drives is shown. And also the amount of required disk space for the installation of VK-64/VK-16/VK-Lite.

5. Click [Install].

   The installation process begins, and a progress bar is displayed.


Canon Network Video Recorder VK Series v2.1 - InstallShield Wizard
InstallShield
< Back
Install
Cancel

Ready to Install the Program

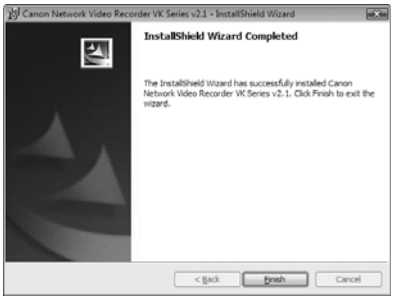
The wizard is ready to begin installation.

Click Install to begin the installation.

If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

6. When the [InstallShield Wizard Completed] screen is displayed, click [Finish].

   Installation is now completed.


Canon Network Video Recorder VK Series v2.1 - InstallShield Wizard
< Back
Finish
Cancel

InstallShield Wizard Completed

The InstallShield Wizard has successfully installed Canon Network Video Recorder VK Series v2.1. Click Finish to exit the wizard.

Upgrade from Version 1.0, 1.1, 1.2, 1.3, 1.4, and 2.0

If you upgrade the Viewer from an older version, all the settings are taken over to the new version and video data recorded with older version can be played back with Version 2.1. It is recommended to confirm your settings after the upgrading.

For the details, see "Upgrade VK-64/VK-16" (→ P. 8-3).

Note

- If you are using VK-64/VK-16 with NAS server, you need to set up log-on settings again after upgrading VK from v1.3, 1.4, 2.0 to v2.1.
- Version 2.1 of the Viewer is able to connect to versions 1.2, 1.3, 1.4 and 2.0 of the Storage Server. All of the versions are able to be selected as the Master Storage Server. However, the following functions are specific to version 2.1, and cannot be used on previous versions of the Storage Server.
  - VB-C500D registration
  - Audio-related settings (Can be used with version 2.0 Storage Servers)
  - Retrieving summary information from a Storage Server (Can be used with version 2.0 Storage Servers)
- Viewer v2.1 cannot connect to the Storage Server v1.0 or v1.1.
- Older version of Viewer cannot connect to the Storage Server v2.1.
- Version 2.1 of the Storage Server can continue to use the video data and storage settings from previous versions.
- When upgrading from any versions before 1.1.2.27, you need to set motion detection (→ P. 4-46) again. You can check your version information from the version information (→ P. 10-5) of the Storage Server and the Viewer.

Preparation and Precaution

Use NTFS-formatted hard disk

The hard disk where the software will be installed and video data will be stored should be formatted in the NTFS.

You can convert the current hard disk into the NTFS format using the following command at the command prompt.

convert <Name of the drive>:/fs:ntfs

Example: To convert Drive C into the NTFS format:

convert c:/fs:ntfs

Tip

Select [**All Programs**], [**Accessories**], and [**Command Prompt**] from the [**Start**] menu to display the command prompt. If you press the [**Enter**] key following the command shown above, a series of questions appears, then conversion starts. Reboot the PC after the process completes conversion. Any data on the hard disk is not lost by conversion.

Stop other applications

You should stop other applications including anti-virus program before starting installation.

3

Storage Server Configuration Reference

Chapter Overview

The Storage Server can record videos and events (sensor input and motion detection) data from multiple camera servers.

This chapter explains how to set the installed Storage Server to use the storage server.

Use the [**Storage Server Configuration**] dialog to set the Storage Server.

In the [**Storage Server Configuration**] dialog, you can configure settings for disk management, event management, event notification, and user management.

[Settings] Tab

In the [**Settings**] tab, specify the Storage Server name, Proxy Server, and recording options.

[Event] Tab

You can set the Storage Server to send an e-mail to the user when an event has occurred.

In the [**Event**] tab, specify the priority for each event type.

[Event Notification] Tab

In the [**Event Notification**] tab, configure the settings for sending an e-mail when an event has occurred.

[User Management] Tab

In the [**User Management**] tab, add users and assign privileges to them.

[Storage Server Configuration] Dialog

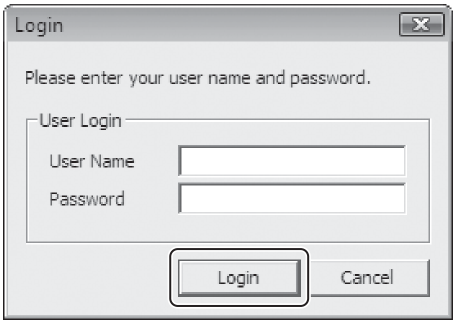
How to Start-Up

Double-click the [**Storage Server Configuration**] desktop icon.

Storage
Server
Configuratio
n v2.1

Alternatively, from the Windows [**Start**] menu select: [**All Programs**] > [**WebView Livescope**] > [**Network Video Recorder VK Series v2.1**] > [**Storage Server Configuration**].

If the [**Authentication is required when starting this tool**] is selected (→ P. 3-27), the [**Login**] dialog appears.



Login

Please enter your user name and password.

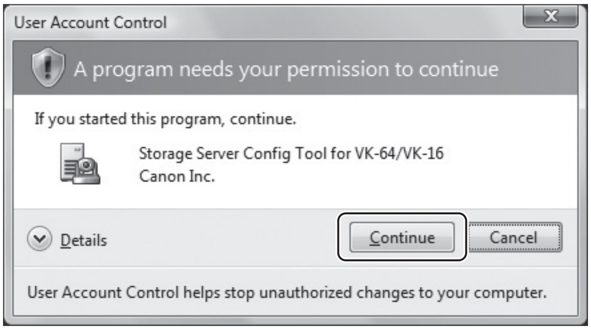
User Login

User Name

Password

In this case, enter your user name and password, and click [**Login**].

If User Account Control is enabled on Windows Vista/Windows Server 2008, the [**User Account Control**] screen will appear.



User Account Control

A program needs your permission to continue

If you started this program, continue.

Storage Server Config Tool for VK-64/VK-16
Canon Inc.

User Account Control helps stop unauthorized changes to your computer.

In this case, click the [**Continue**] button.

Note

To configure the Storage Server, you should log into Windows with the Windows Administrator privilege.

Screen Configuration

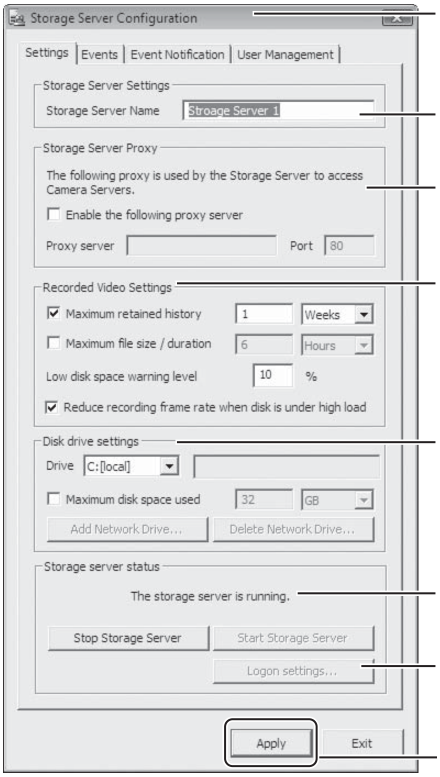
The [**Storage Server Configuration**] dialog has the following four tabs.

- [**Settings**] Tab
- [**Events**] Tab
- [**Event Notification**] Tab
- [**User Management**] Tab

[Settings] Tab

In the [**Storage Server Configuration**] dialog, [**Settings**] tab allows you to configure these items below.

- Storage Server Name
- Proxy Server
- Recording options


Storage Server Configuration
Settings
Events
Event Notification
User Management
Storage Server Settings
Storage Server Proxy
Recorded Video Settings
Disk drive settings
Storage server status
Add Network Drive...
Delete Network Drive...
Stop Storage Server
Start Storage Server
Logon settings...
Apply
Exit

Storage Server Name: Stroage Server 1

The following proxy is used by the Storage Server to access Camera Servers.

☐ Enable the following proxy server

Proxy server: Port: 80

☑ Maximum retained history: 1 Weeks

☐ Maximum file size / duration: 6 Hours

Low disk space warning level: 10 %

☑ Reduce recording frame rate when disk is under high load

Drive: C:[local]

☐ Maximum disk space used: 32 GB

The storage server is running.

Click the title bar icon and select [**About Storage Server Configuration**] or right-click the title bar todisplay the [**About Storage Server Configuration**] box.

Enter name for your Storage Server.

Enter proxy address for connecting to Camera Servers.

Set [**Maximum retained history**], [**Maximum file size/duration**] and [**Low Disk Space Warning Level**].

Set [**Maximum disk space used**] for each device.
Also, add or remove network drives.

Storage Server status indicator. [**Start Storage Server**] and [**Stop Storage Server**] start and stop the Storage Server.

Use an account other than the [**Local System account**] to log onto the Storage Server to enable connection to the network drive.

Click [**Apply**] to save changes when you modify settings from each tab.

Tip

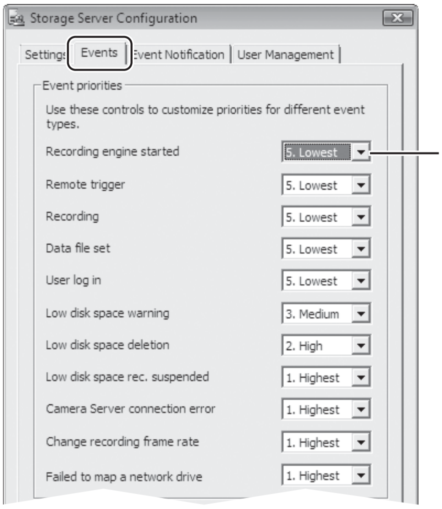
VK-64/VK-16 can save video data on the network drive.

[Events] Tab

You can set the Storage Server to send an e-mail to the user when an event has occurred.

In the [**Storage Server Configuration**] dialog, [**Events**] tab allows you to configure the priority for types of the event.

E-mails are sent according to the priorities set in the [**Events**] tab.



Use these controls to customize priorities for different event types.

Recording engine started	5. Lowest
Remote trigger	5. Lowest
Recording	5. Lowest
Data file set	5. Lowest
User log in	5. Lowest
Low disk space warning	3. Medium
Low disk space deletion	2. High
Low disk space rec. suspended	1. Highest
Camera Server connection error	1. Highest
Change recording frame rate	1. Highest
Failed to map a network drive	1. Highest

Select a suitable event priority from the drop-down menu for each event type listed.

Note

- Events associated with [**Recording engine started**], [**Data file set**], [**User log in**], and [**Failed to map a network drive**] do not appear in a Viewer's Timeline (→ P. 5-48), [**Live Events Log**] (→ P. 5-56), or [**Event Search**] Dialog (→ P. 5-58).
- The priority of an event created by a manual recording using [**Record Now**] (→ P. 5-52) will always be Priority 1. It cannot be changed from this dialog above.

[Event Notification] Tab

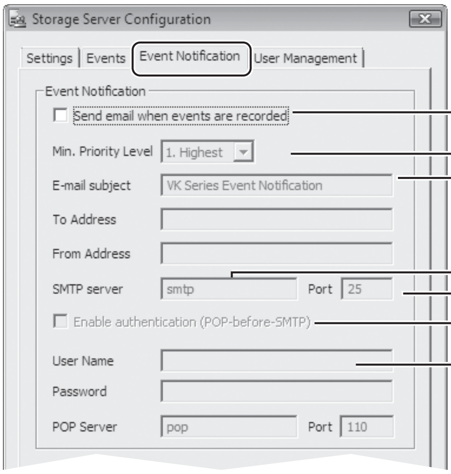
In the [**Storage Server Configuration**] dialog, [**Event Notification**] tab allows you to configure the setting of the e-mail sent to the user when the event occurs.

E-mails are sent according to the priorities set in the [**Events**] tab.

Example event notification e-mail

An event of priority 3 occurred on 12/05/2006 at 15:15:17 +1000.

Parking Lot 1: Sensor on



☐ Send email when events are recorded

Min. Priority Level: 1. Highest

E-mail subject: VK Series Event Notification

To Address:

From Address:

SMTP server: smtp Port: 25

☐ Enable authentication (POP-before-SMTP)

User Name:

Password:

POP Server: pop Port: 110

Enable e-mail notification and select a priority.
Events of that priority and above will lead to notification emails.

Enter the e-mail subject line, for example, "Immediate Actio Required". Enter the address of the recipient and enter your from address.

Enter a Host Name or IP address and Port Number of mail server for outgoing mail.

Enable authentication (POP-before-SMTP) for connection and enter [**User Name**], [**Password**] and [**POP Server**] details.
If this is enabled, the Storage Server will attempt to perform a POP login before sending e-mail that may be required for some SMTP servers.

Tip

You can only register one e-mail address in the To Address field.
If you want to send the e-mail to multiple addresses, use a group address.

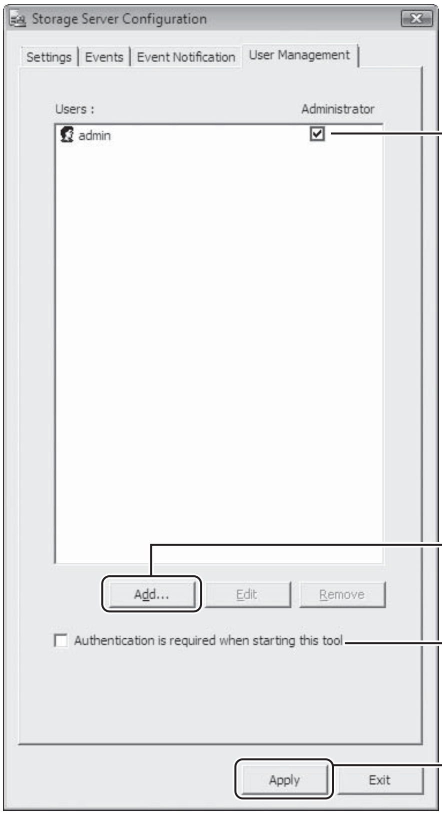
[User Management] Tab

In the [Storage Server Configuration] dialog, [User Management] tab allows you to set up users and their privileges.

[User Management] tab allows you to configure the following privileges:

- Administrator
- Not Administrator (Operator)

Administrator has access to the Viewer including Camera Server setup, recording schedules and Viewer setup.


Storage Server Configuration
Settings
Events
Event Notification
User Management
Users :
Administrator
admin ☑
Add...
Edit
Remove
☐ Authentication is required when starting this tool
Apply
Exit

Check to enable user to have Administrator privileges (full access to configuration functions).

Use [Add] to add users to this field.
There is no limit to the number of users you can add.

If the [Authentication is required when starting this tool] box should be checked.

Click [Apply] to save changes.

Users who have Operator Status cannot configure, register and change Camera Servers, or configure and change recording schedules.

By default, a user called "admin" is created. The password is "NVR". It is strongly recommended that this should be changed after installation.

It is necessary to set up users on all Storage Servers. A particular user should be set up to have the same password on each Storage Server.

Set the [Settings] Tab

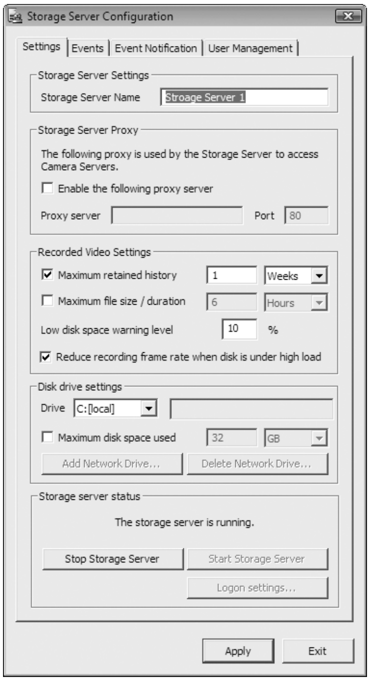
In the [**Storage Server Configuration**] dialog, [**Settings**] tab allows you to configure the items below.

- Storage Server name
- Proxy Server
- Settings for storing recorded video
- Start and stop of Storage Server
- Logon Account for Storage Server

How to Display the [Settings] Tab

Double-click the [**Storage Server Configuration**] desktop icon.

The [**Storage Server Configuration**] dialog appears and the [**Settings**] tab is displayed.


Storage Server Configuration
Settings
Events
Event Notification
User Management
Add Network Drive...
Delete Network Drive...
Stop Storage Server
Start Storage Server
Logon settings...
Apply
Exit

Storage Server Settings

Storage Server Name: Stroage Server 1

Storage Server Proxy

The following proxy is used by the Storage Server to access Camera Servers.

☐ Enable the following proxy server

Proxy server: Port: 80

Recorded Video Settings

☑ Maximum retained history: 1 Weeks

☐ Maximum file size / duration: 6 Hours

Low disk space warning level: 10 %

☑ Reduce recording frame rate when disk is under high load

Disk drive settings

Drive: C:[local]

☐ Maximum disk space used: 32 GB

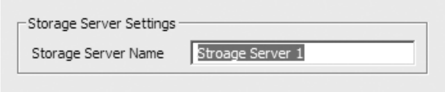
Storage server status

The storage server is running.

How to set the [Settings] Tab

Changing the Storage Server name

Enter a new name in [**Storage Server Name**] to change the Storage Server name (You can use up to 20 characters).



Storage Server Settings

Storage Server Name: Stroage Server 1

Tip

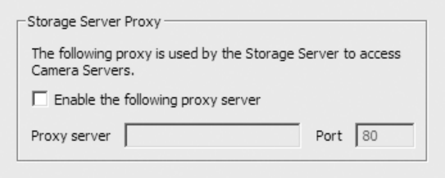
It is recommended to use an easy-to-understand name if you are using multiple Storage Servers.

Enter the Storage Server Proxy Address VK-64/16

If the Storage Server needs to access Camera Servers via proxy server, you may need to configure proxy settings.

* See P. xiii if you use a proxy server.

1. In the [Storage Server Proxy] field, tick the [Enable the following proxy server] box.
2. Enter the [Proxy server] address and [Port].



Storage Server Proxy

The following proxy is used by the Storage Server to access Camera Servers.

☐ Enable the following proxy server

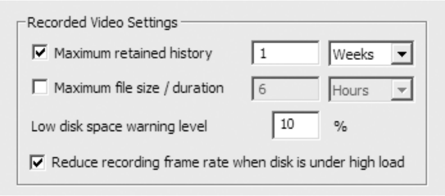
Proxy server:

Port: 80

For more information on proxy server usage, contact your Camera Server administrator.

Enter [Recorded Video Settings]

1. [Maximum retained history] - Check the [Maximum retained history] option and enter a value from 1 to 999 and then select [Days] or [Weeks] from the pull-down menu.



Recorded Video Settings

☑ Maximum retained history 1 Weeks

☐ Maximum file size / duration 6 Hours

Low disk space warning level 10 %

☑ Reduce recording frame rate when disk is under high load

2. **VK-64/16**

[**Maximum file size/duration**] - Check the [**Maximum file size/duration**] option, enter a value, and select [**MB**] or [**Hours**]. You can enter 32 - 1024 for [**MB**] and 1 - 24 for [**Hours**]. If you do not enter a value, 1024 MB or 24 hours is used for the Maximum file size/duration value.

3. [Low disk space warning level] - Enter a percent value.

   When the remaining space falls below the specified value, the event will be displayed and a notification will be e-mailed (→ P. 3-5, P. 3-23).

4. **VK-64/16**

[**Reduce recording frame rate when disk is under high load**] - When disk is highly loaded, recording frame rate is temporarily reduced to prevent the recording from stopped. See Chapter 6 for details. This function is available for JPEG video recording. It cannot be used for MPEG-4 video recording (VB-C500D, VB-C60).

Tip

If [**Reduce recording frame rate when disk is under high load**] is selected, you will receive an event notification such as "Effective Recording rate (<recording rate before change> → <recording rate after change> %)" when the recording frame rate drops.
Ex. Effective Recording rate (100.0 → 90.0 %)

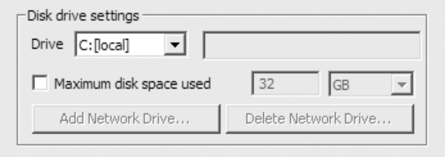
Note

When the free disk space has fallen below the value specified in the [**Low Disk Space Warning Level**] field, an event occurs and an event notification mail is sent. Also, if the used disk space exceeds the value specified in the [**Maximum disk space used**] field, recorded video will not be saved until the required free disk space is secured. See P. 3-17 for the disk space management.

Select [Disk Drive Settings]

1. [Drive] - Select the disk drive to configure, from the drop-down menu.
2. [Maximum disk space used] - Check the box and enter a value in Megabytes (MB) or Gigabytes (GB), for example, "50".

   This establishes the maximum disk space used for all video files on the specified drive.



3. [Add Network Drive] - Add a disk drive on the network used as the network drive.

   The added network drive is shown on the [**Drive**] drop-down menu.
4. [Delete Network Drive] - Delete an added network drive.

Adding/Removing a Network Drive VK-64/16

By adding a network drive, you can save recorded video data on a network drive such as NAS (Network Attached Storage) in addition to the internal HDD.

If you add a network drive in the [**Storage Server Configuration**] window, the drive will be added to the list of the pull-down menu of the [**Add Camera Server**] and [**Edit Camera Server**] dialog (→ P. 4-18, P. 4-24).

Note

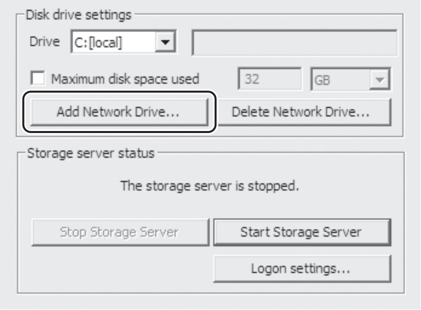
Use recommended NAS servers with Windows Storage Server 2003 or Windows Storage Server 2003 R2.

Tip

When using the Storage Server with the local system account, the [**Add Network Drive**] and [**Delete Network Drive**] buttons are disabled.

To add a network drive

1. Click [Add Network Drive].


Disk drive settings
Add Network Drive...
Delete Network Drive...
Storage server status
Stop Storage Server
Start Storage Server
Logon settings...

Drive: C:[local]

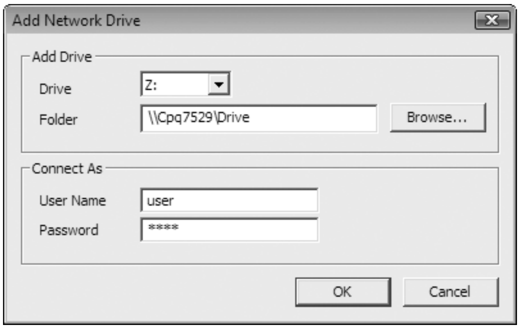
☐ Maximum disk space used 32 GB

The storage server is stopped.

2. The [Add Network Drive] dialog appears.

   Select a drive to add as a network drive and enter a path assigned to the drive.

   You can also enter a path automatically by selecting a folder.


Add Network Drive
Add Drive
Browse...
Connect As
OK
Cancel

Drive: Z:

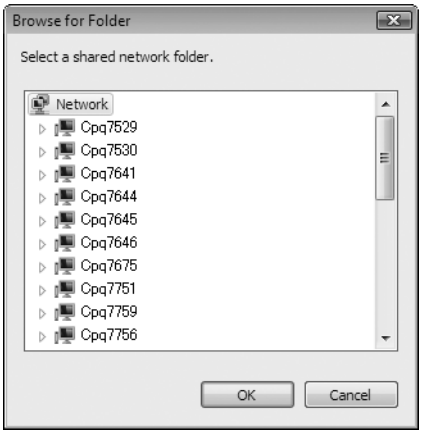
Folder: \\Cpq7529\Drive

User Name: user

Password: ****

When selecting a folder with [Browse]

Click [Browse], select a folder where you want to save recorded video data in the [Browse for Folder] dialog. Click [OK] to enter the path of the selected folder in the path field.


Browse for Folder
Network
Cpq7529
Cpq7530
Cpq7641
Cpq7644
Cpq7645
Cpq7646
Cpq7675
Cpq7751
Cpq7759
Cpq7756
OK
Cancel

Select a shared network folder.

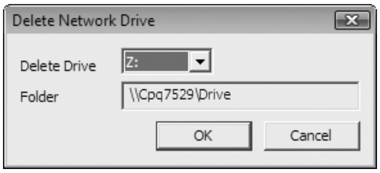
3. Enter the user name and password to access the network drive in the respective fields, and click [OK].

   Be sure to use different user name and password from the logon user name and password for the local system account.

   If addition is successful, the added drive appears on the drive selection pull-down menu.

To remove a network drive

1. Click [Delete Network Drive].
2. Select a network drive and click [OK] to delete the selected drive from the Storage Server.



Delete Drive: Z:
Folder: \\Cpq7529\Drive

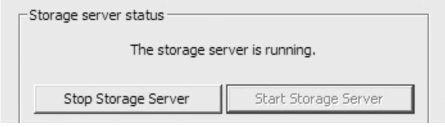
Note

- About Network Drive
  VK-64/VK-16 can record videos on a drive on the network. The drive type is shown at the head of the [Drive] drop-down menu as "Internal disk: [local], Network drive: [network]".
- About Video Recording Operation
  If disk space is not enough to cover the specified value configured with [Maximum disk space used], the retained duration of recorded video may be shorter than the specified period or the recording may be temporarily stopped. Please be sure to perform sufficient tests before starting operations.
- For details about disk space management on the Storage Server, see "Important: Disk Space Management" (→ P. 3-17).
- Windows does not allow a user who has logged in with a [local system account] (used for normal service management) to add a network drive. The [Add network drive] and [Delete network drive] items are disabled while you are logging into Windows with a [local system account]. To set the network drive, click [Stop Storage Server] to stop the Storage Server, and click the [Logon Settings] and switch to an account which is allowed to use the network drive (i.e., account with Windows' Administrator and [Logon As Service] privileges). see "[Logon As Service] Privilege" (→ P. 3-15).
- You cannot use a UNC path or removable disk when adding a network drive.
- If you add or delete a network drive, the Storage Server program will reboot.
- Multiple Storage Servers cannot use the same network drive simultaneously.
- Single network drive cannot allocate to multiple drivers.
- If the selected network drive cannot be accessed because the network is disconnected, the selected drive is powered off, or you entered a wrong path, the following error message will appear.
  "Network path cannot be found."
- While the network drive is not operating (e.g., due to network disconnection), video will not be recorded until the drive recovers.
- If a storage server is booted when the storage server is unable to connect to a NAS server, video image data won't be written to or recorded data won't be read from NAS server even after the NAS server recovers. In such case, reboot the storage server.

Start or Stop the Storage Server Program

Click [**Stop Storage Server**] to stop the Storage Server.

Click [**Start Storage Server**] to start the Storage Server.



Storage server status

The storage server is running.

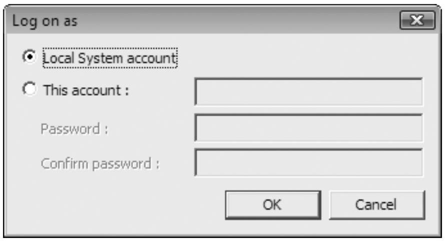
> **Note**
>
> If you need to stop the Storage Server Program, you should inform all users connected to the storage server before you stop the storage server.

Change the [Logon Settings]

1. If you need to log onto the Storage Server with another account when using a network drive, click [Stop Storage Server].
   After the Storage Server stops, click [Logon Settings].
   The [Log on as] dialog appears.

Logon settings...

2. If you are logging onto the Storage Server with a [Local System account], select [Local System Account]. If you are log onto the Storage Server with another account, enter the account name in [Account] and password in [Password] and confirm password.



Log on as

● Local System account

○ This account :

Password :

Confirm password :

3. Click [OK].
4. Click [Start Storage Server] to start the Storage Server with the specified account.

> **Note**
>
> If you are using VK-64/VK-16 with NAS server, you need to set up log-on settings again after upgrading VK from v1.3, v1.4 or v2.0 to v2.1.

Message

When you have changed items affecting recording settings:

When you click [Apply] or [End], the following message will appear.

"An item which affects recording settings was changed. Please inspect the "Record Settings Summary" dialog on the Recording Schedules window to check the effects of the change."

When you have changed the [Maximum retained history] setting:

When you click [Apply] or [End], the following message will appear.

"The new retained history settings may result in the deletion of some existing video files. Do you wish to continue?"

When you have added or deleted a network drive:

When you click [Apply] or [End] before restarting the storage server, the following message appears.

"Drive use settings have changed. Do you wish to restart the recording server?"

[Logon As Service] Privilege

When you want to add the [Logon As Service] privilege to an existing Windows account so that you may be able to configure network drive settings, perform the following steps before configuring the [logon settings].

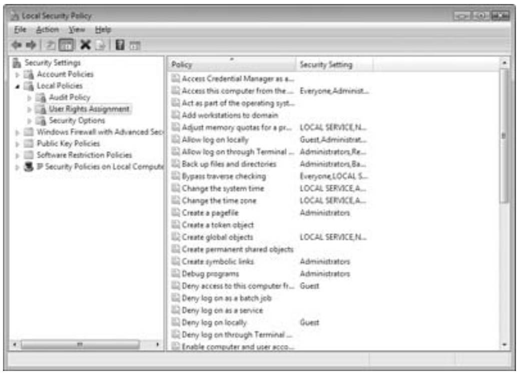
1. **Click [Control Panel[, [Performance and Maintenance], [Administration Tool], and [Local Security Policy] from the Windows' [Start] menu.**

   The [Local Security Policy] dialog appears.

2. **Select [Local Policy] and [User Privilege Assignment] from the tree to the left.**

3. **Double-click [Logon as Service] from the list to the right.**

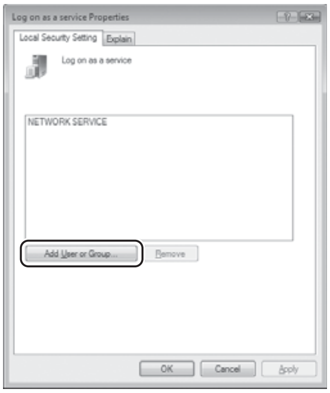
   The [Logon as Service Properties] dialog oppears.


Local Security Policy
File
Action
View
Help
Security Settings
Account Policies
Local Policies
Audit Policy
User Rights Assignment
Security Options
Windows Firewall with Advanced Sec
Public Key Policies
Software Restriction Policies
IP Security Policies on Local Compute

Policy	Security Setting
Access Credential Manager as a...	
Access this computer from the ...	Everyone,Administ...
Act as part of the operating syst...	
Add workstations to domain	
Adjust memory quotas for a pr...	LOCAL SERVICE,N...
Allow log on locally	Guest,Administrat...
Allow log on through Terminal ...	Administrators,Re...
Back up files and directories	Administrators,Ba...
Bypass traverse checking	Everyone,LOCAL S...
Change the system time	LOCAL SERVICE,A...
Change the time zone	LOCAL SERVICE,A...
Create a pagefile	Administrators
Create a token object	
Create global objects	LOCAL SERVICE,N...
Create permanent shared objects	
Create symbolic links	Administrators
Debug programs	Administrators
Deny access to this computer fr...	Guest
Deny log on as a batch job	
Deny log on as a service	
Deny log on locally	Guest
Deny log on through Terminal ...	
Enable computer and user acco...	

4. **Click [Add User or Group].**

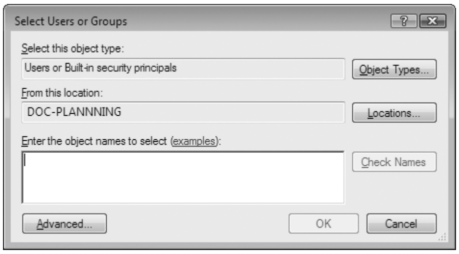
   The [**Select User or Group**] dialog oppears.


Log on as a service Properties
Local Security Setting
Explain
Log on as a service
NETWORK SERVICE
Add User or Group...
Remove
OK
Cancel
Apply

5. **Enter the Windows account name in the [Enter object name to select] field.**

   Enter or change the object name, location, and detail settings as required.

   Be sure to enter a Windows account with Administrator privileges.


Select Users or Groups
Object Types...
Locations...
Enter the object names to select (examples):
Check Names
Advanced...
OK
Cancel

Select this object type: Users or Built-in security principals

From this location: DOC-PLANNNING

6. **Click [OK].**

   The [**Logon as Service Properties**] dialog reappears.

7. **Click [OK].**

   The [**Local Security Settings**] dialog reappears.

8. **Close the [Local Security Settings] dialog.**

Disk Space Management Level

The Storage Server monitors the remaining disk space to check the current disk space manegement level and takes a measure according to the current level.

1. [Low Disk Space Warning Level]
2. Threshold Level
3. Limit Level

Administrator can set the [**Low disk space warning level**] 1. using the Low Disk Space Warning Level field in the [**Settings**] tab.

The Storage Server calculates the values for Threshold Level 2. and Limit Level 3. based on various conditions and settings.

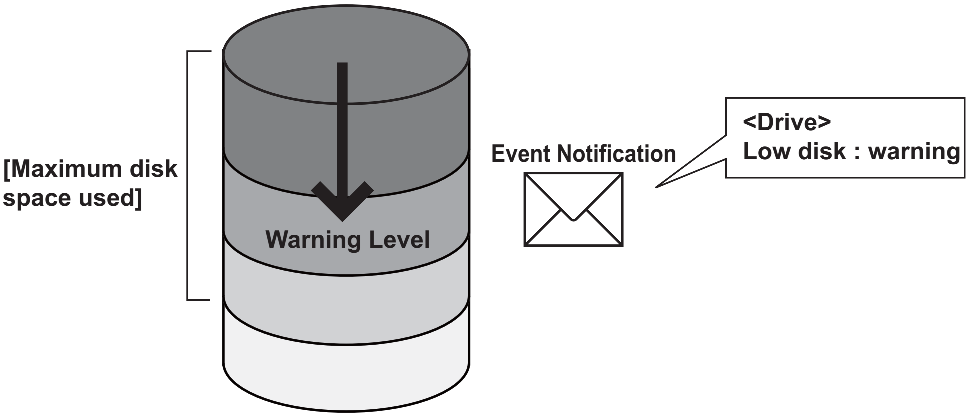
Handling at Each Level

The Storage Server performs the following when the disk space reaches each level.

In case of [Low Disk Space Warning Level]

The Storage Server generates an event when the disk space available for recording (i.e., free space from the Maximum disk space used value) has fallen down to a certain level.

If the [**Maximum disk space used**] field is not set, the entire drive capacity of the drive specified in the [**Drive**] field is considered to be the maximum disk space used.



Note

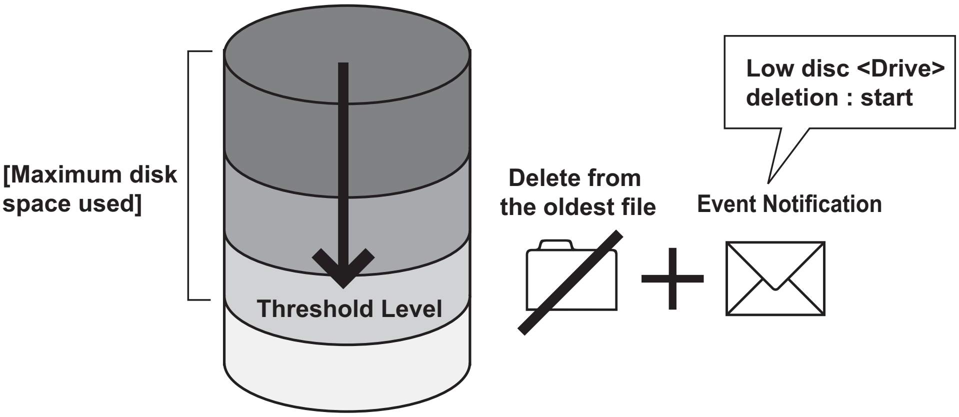
The event notification e-mail is sent when the priority specified for the [**Low Disk Space Warning Level**] option in the [**Events**] tab of the [**Storage Server Configuration**] dialog is equal to or higher than the priority specified in the [**Event Notification**] tab. See P. 3-21 and P. 3-23 for how to set the [**Events**] and [**Event Notification**] tabs.

Tip

Event notification allows early control by an administrator to avoid problems due to running out of disk space (for example, removing unnecessary recording schedules).

In case of Threshold Level

The Storage Server continues recording video; however, it starts deleting the video files from the oldest one, and generates an event.


[Maximum disk space used]
Threshold Level
Delete from the oldest file
Event Notification
Low disc <Drive> deletion : start

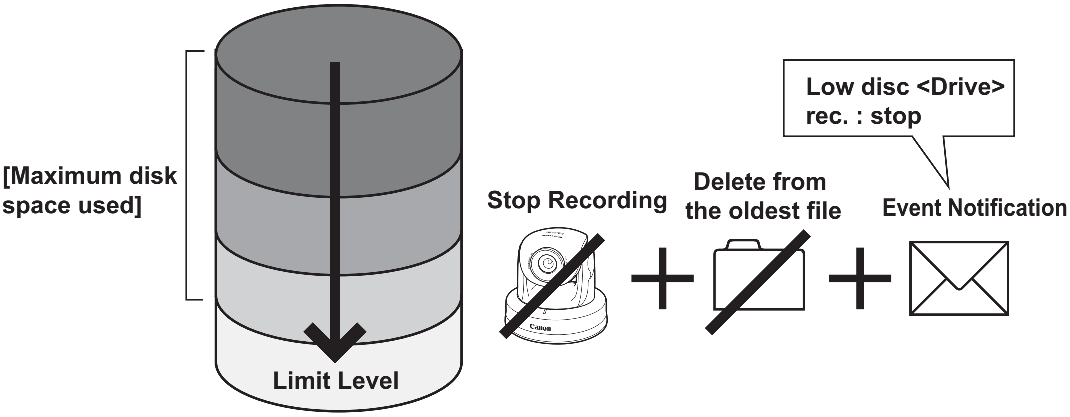
Tip

Old video files may be deleted even if these are within the [Maximum retained history] period.
However if the oldest file is currently used in the Viewer (for example for playback of recorded video), it would not be deleted and the next oldest file will be deleted instead. Deletion will continue until the free space rises above this threshold again.
See Chapter 7 for saving files.

In case of Limit Level

The Storage Server stops recording video when the free disk space goes down to this level, and generates an event.

When the free disk space increases above this level by deleting old video files, the Storage Server resume recording video and generates an event.


[Maximum disk space used]
Limit Level
Stop Recording
Delete from the oldest file
Event Notification
Low disc <Drive> rec. : stop

[Low Disk Space Warning Level] Calculation Method

The [**Low Disk Space Warning Level**] occurs when the Storage Server fulfills the condition 1. or 2. below.

1. **When the Storage Server disk space used exceeds the following value:**

   M x (100 - A)/100

   M: Value for [**Maximum disk space used**]

   A: Value for [**Low disk space warning level**]

   Example: In case of the value for [**Maximum disk space used**] is 100 GB and the value for [**Low disk space warning level**] is 10%, the Storage Server reaches the [**Low disk space warning level**] when the remaining free disk space becomes 10 GB or less.

2. **When free disk space falls below the following value:**

   Disk capacity x A/100

   A: Value for [**Low disk space warning level**]

   Example: In case of the value for disk capacity is 80 GB and the value for [**Low disk space warning level**] is 10%, the Storage Server reaches the [**Low Disk Space Warning Level**] when the remaining free disk space becomes 8 GB or less.

Tip

If other applications are also using the same hard disk, you need to review the condition 2). Even if the Storage Server uses a small quantity of disk space, it may reach the [**Low Disk Space Warning Level**] because other applications has consumed disk space.

Threshold Level Calculation Method

The Threshold Level occurs when the Storage Server fulfills the condition 1) or 2) below.

1. **When the Storage Server disk space used exceeds the following value:**

   a. When [**Maximum disk space used**] is set 384 MB or more,
      [**Maximum disk space used**] - 96MB

   b. When [**Maximum disk space used**] is set 384 MB or less,
      [**Maximum disk space used**] x 3/4

2. **When free disk space falls below the following value:**

   (Number of Camera Servers + 1) x 32MB + 96MB

Limit Level Calculation Method

The Limit Level occurs when the Storage Server fulfills the condition 1. or 2. below.

1. When the Storage Server disk space used exceeds the following value:

   [Maximum disk space used]

2. A When free disk space falls below the following value:

   (Number of Camera Servers + 1) x 32MB

Calculation Example for Each Level

Disk Drive	Disk Capacity	Free Disk Space	Max. Disk Space Used	Camera Server No.
C Drive	100GB	50GB	40GB	19 units
D Drive	200GB	200GB	200GB	19 units

The following is a table of values for each level calculated based on the examples above.

Disk Drive	Low Disk Warning Level	Threshold Level	Limit Level
C Drive	1. 40GB x (100-10) / 100=**36GB** 2. 100GB x 10 / 100=**10GB**	1. 40GB-96MB=**39.904GB** 2. (19+1) x 32MB+96MB=**736MB**	1. **40GB** 2. (19+1) x 32MB=**640MB**
D Drive	1. 200GB x (100-10) / 100=**180GB** 2. 200GB x 10 / 100=**20GB**	1. 200GB-96MB=**199.904GB** 2. (19+1) x 32MB+96MB=**736MB**	1. **200GB** 2. (19+1) x 32MB=**640MB**

Note

- **Threshold Level** can be used as a protective level to avoid achieving **Limit Level**. It is recommended that you take measures when [**Low Disk Space Warning Level**] event notification is generated, such as deleting unnecessary video files.
- Storing video data above the Threshold Level increases load over the Storage Server and may cause recording interruption.
  It is strongly recommended to use the Storage Server below the Threshold Level.
- See "Operation Guideline for Recording and Viewing" (→ P. 6-5) for detailed of operation.
- If e-mail notification for each levels is selected, the system can be configured to provide e-mail notifications when one of these levels is reached (→ P. 3-23).
- The requirements of **Threshold Level** may be achieved before the requirements of [**Low Disk Space Warning Level**] are satisfied, depending on circumstances. For example, large numbers of cameras with limited disk capacity may bring a larger value for **(Numbers of camera +1) x 32 MB + 96 MB**, compared with the value of **Disk capacity x [Low disk space warning level]/100**.

Set [Events] Tab VK-64/16

[**Events**] tab in the [**Storage Server Configuration**] dialog allows you to specify event priorities.

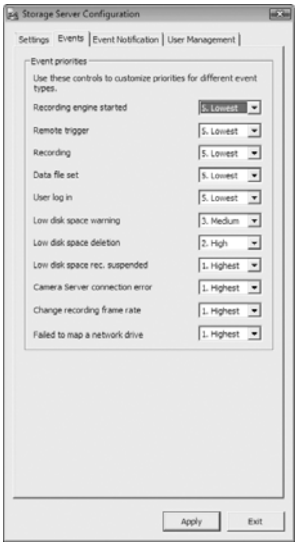
If you have configured the event notification e-mail settings, e-mails are sent based on the priorities set in the [**Events**] tab.

How to Display the [Events] Tab

Double-click the [Storage Server Configuration] desktop icon.

The [**Storage Server Configuration**] dialog appears and the [**Settings**] tab is displayed.

Click the [**Events**] tab to open it.


Storage Server Configuration
Settings
Events
Event Notification
User Management
Event priorities
Apply
Exit

Use these controls to customize priorities for different event types.

Recording engine started: 5. Lowest
Remote trigger: 5. Lowest
Recording: 5. Lowest
Data file set: 5. Lowest
User log in: 5. Lowest
Low disk space warning: 3. Medium
Low disk space deletion: 2. High
Low disk space rec. suspended: 1. Highest
Camera Server connection error: 1. Highest
Change recording frame rate: 1. Highest
Failed to map a network drive: 1. Highest

How to Set the Events Tab

Set the Priority for the Event

Select the priority for the event from drop-down menu for each setting item.

Item	Setting
Recording engine started	1. Highest, 2. High, 3. Medium, 4. Low, **5. Lowest**
Remote trigger	1. Highest, 2. High, 3. Medium, 4. Low, **5. Lowest**
Recording	1. Highest, 2. High, 3. Medium, 4. Low, **5. Lowest**
Data file set	1. Highest, 2. High, 3. Medium, 4. Low, **5. Lowest**
User log in	1. Highest, 2. High, 3. Medium, 4. Low, **5. Lowest**
Low disk space warning	1. Highest, 2. High, **3. Medium**, 4. Low, 5. Lowest
Low disk space deletion	1. Highest, **2. High**, 3. Medium, 4. Low, 5. Lowest
Low disk space rec. suspended	**1. Highest**, 2. High, 3. Medium, 4. Low, 5. Lowest
Camera Server Connection error	**1. Highest**, 2. High, 3. Medium, 4. Low, 5. Lowest
Change recording frame rate	**1. Highest**, 2. High, 3. Medium, 4. Low, 5. Lowest
Failed to map a network drive	**1. Highest**, 2. High, 3. Medium, 4. Low, 5. Lowest

Values shown in bold are the initial setting priority.

Note

- Events associated with [**Recording**], [**User log in**], and [**Failed to map a network drive**] do not appear in a Viewer's Timeline (→ P. 5-48), [Live Events Log] (→ P. 5-56), or [**Event Search**] Dialog (→ P. 5-58).
- To detect such a event, set the e-mail notification using the [**Event Notification**] tab (→ P. 3-23).

Set the [Event Notification] Tab **VK-64/16**

[**Event Notification**] tab in the [**Storage Server Configuration**] dialog allows you to configure.

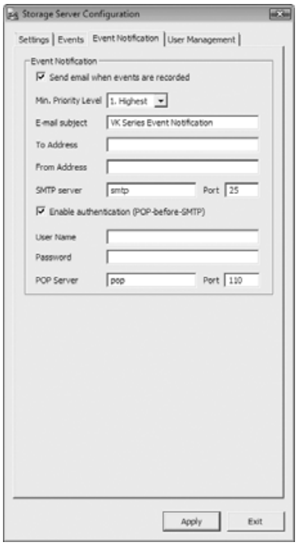
Configure the e-mail notification settings based on the priorities set in the [**Events**] tab.

How to Display the [Event Notification] Tab

Double-click the [**Storage Server Configuration**] desktop icon.

The [**Storage Server Configuration**] dialog appears and the [**Settings**] tab is displayed.

Click the [**Event Notification**] tab to open it.



☑ Send email when events are recorded

Min. Priority Level: 1. Highest

E-mail subject: VK Series Event Notification

To Address:

From Address:

SMTP server: smtp Port: 25

☑ Enable authentication (POP-before-SMTP)

User Name:

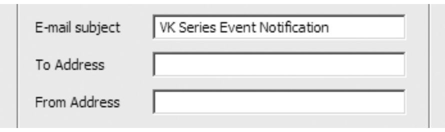
Password:

POP Server: pop Port: 110

How to Set the [Event Notification] Tab

Set the Event Notification Priority

1. Check the [Send E-mail when event occurs option] and select the priority level for sending e-mails from the [Priority] drop-down menu. Events of the setting priority and above will lead to e-mail notification .
2. Enter a subject in the [E-mail subject] line (e.g., "Immediate Action Required"), recipient's address in the [To Address]: line, and sender's address in the [From Address]: line.



E-mail subject: VK Series Event Notification

To Address:

From Address:

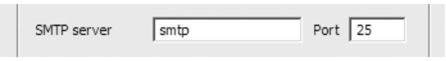
Note

You can enter each of the subject, recipient's address, and sender's address in up to 100 characters.

Tip

You can only register one e-mail address in the [To Address] field.
If you want to send the e-mail to multiple addresses, use a group address.

3. Enter the host name or IP address of the [SMTP server] in SMTP Server and port number in [Port].

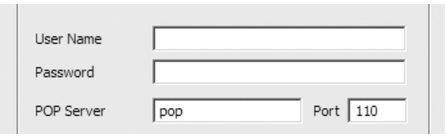


SMTP server: smtp
Port: 25

Note

Enter the host name in up to 255 characters.

4. If you wan to use POP-before-SMTP for user authentication, check the [Use POP-before-SMTP] option, and enter the user name used for authentication in [User Name] and password in [Password]. Also, enter the host name or IP address of the POP server in [POP Server] and port number in [Port].



User Name:
Password:
POP Server: pop
Port: 110

Note

- Enter the user name in up to 100 characters.
- Enter the password in up to 20 characters.
- Enter the host name in up to 255 characters.

Tip

If this function is enabled, the Storage Server will attempt to perform a POP login before sending e-mail that may be required for some SMTP servers.

Example event notification e-mail

An event of priority 3 occurred on 12/05/2006 at 15:15:17 +1000.

Parking Lot 1: Sensor on

Set [User Management] Tab

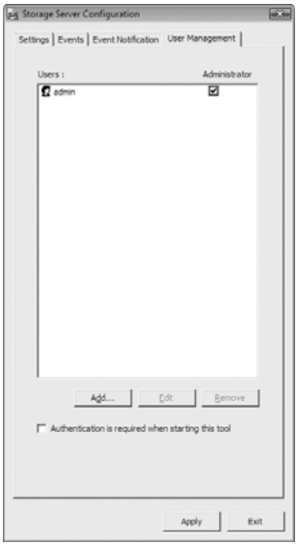
[**User Management**] tab in the [**Storage Server Configuration**] dialog allows you to set up users and their privileges.

How to Display the [User Management] Tab

Double-click the [**Storage Server Configuration**] desktop icon.

The [**Storage Server Configuration**] dialog appears and the [**Settings**] tab is displayed.

Click the [**User Management**] tab to open it.



admin ☑

☐ Authentication is required when starting this tool

Administrator and Operator Status User

Administrators can access to the Viewer to perform Camera Server setup, recording schedules and Viewer setup.

Operator Status Users can only access the Viewer windows (→ P. 5-13) created by Administrator. Also, they only can access to live video and recorded video on Storage Servers they have permission to access.

Note

- Users who have Operator Status cannot configure, register and change Camera Servers, or configure and change recording schedules.
- By default, a user called "admin" is created. Its password is "NVR". It is strongly recommended to change the user name and password after installation.
- It is necessary to set up user settings on all Storage Servers. A particular user, who operates multiple recording servers, should be set up to have the same password on each Storage Server.

How to Set the [User Management] Tab

Add a User

1. Click [Add] on the [User Management] tab.

   The [Add User] dialog appears.

2. Enter the user's [User Name] (up to 20 characters, including alphanumeric letters and underscore "_").
3. Enter the user's [Password] (up to 20 characters, including alphanumeric letters and underscore "_"). Re-enter the password you have entered in the [Confirm Password] field to confirm it.
4. Click [OK].

   The dialog closes and the new user is displayed in the User List.

Change User to Administrator

1. Check the [Administrator] option of a user in the User List to enable the user to have the Administrator privileges. Do not check the option if you do not want to enable the user to have the Administrator privileges.
2. Click [Apply] to save changes.

> **Note**
>
> The VK-64/VK-16 Administrator status is not related to the Windows Administrator status.

Change User Password

1. Click to select a user in the User List to change the password.
2. Click [Edit] button below in the user list to bring up the [Edit User] dialog.
3. Enter the user's [New Password] (up to 20 characters, including alphanumeric letters and underscore "_"). Re-enter the new password you have entered in the [Confirm Password] field.
4. Click [OK].

   The new password is saved.

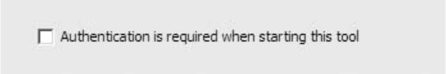
Delete a User

1. Click to select a user in the User List to delete it.
2. Click [Remove].

   The user is deleted.

Request User Authentication at Tool Startup

Check the [**Authentication is required when starting this tool**] if user authentication is required when launching the tool. If this option is selected, the [**Login**] dialog appears before the [**Storage Server Configuration**] dialog appears.



☐ Authentication is required when starting this tool

4

Register Camera Server and Set Recording Schedule

Chapter Overview

This chapter explains how to store Camera Servers registration necessary for creating recording schedules on the Storage Server, as well as the procedure to create recoding schedules.

To store the Camera Servers registration and create recording schedules, launch the VK Viewer and use the [**Camera Summary**] window and [**Recording Schedules**] window under the [**Configuration and Preferences**] screen.

Launch VK Viewer and Display the [Configuration and Preferences] Screen

How to Launch VK-64/VK-16

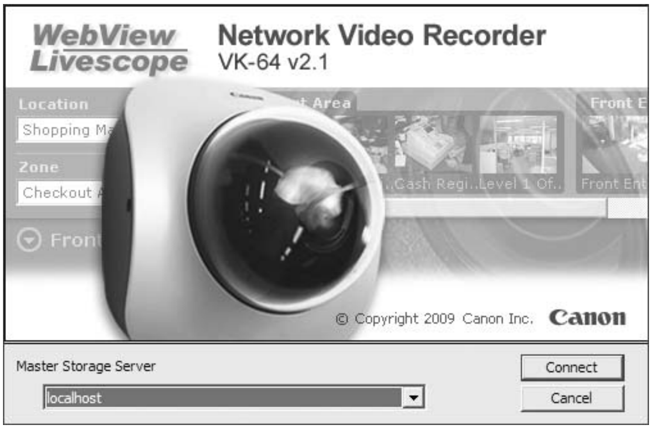
Double-click the [**VK-Lite Viewer v2.1**] desktop icon.

VK-Lite
Viewer v2.1

Alternatively, from the Windows [**Start**] menu select: [**All Programs**] > [**WebView Livescope**] > [**Network Video Recorder VK Series v2.1**] > [**VK Viewer**].

The connect option menu (Start-up Screen) for Storage Server is displayed. Select [**Master Storage Server**] option and click [**Connect**].

Start-up Screen



Master Storage Server: localhost

[localhost]
Connects to Storage Server and starts the Viewer. Select this option to use the local PC where Viewer is installed as the Master Storage Server.

[Use IP address]
Connects to Storage Server and starts the Viewer by specifying its IP address. Select this option when the Storage Server and the Viewer are installed on separate PCs.

[Not use Storage Server]
Select this option to use the Viewer only without connecting to a Storage Server.

Note

If you want to add a Storage Server to the connect option menu, login the desired Storage Server by specifying its IP address and click [**Add Storage Server**] in the [**Viewer Settings**] window (→ P. 5-14).

Tip

- If multiple Storage Servers are being used, you can setup one of them as the Master Storage Server.
- If the Storage Servers v1.2, v1.3, v1.4, v2.0 or v2.1 coexist in the system, either Storage Server can be specified as the Master Storage Server.
- Older viewer than Viewer 2.1 cannot connect to the Storage Server v2.1.
- If you want to connect to the Storage Server directly without displaying Start-up Screen, uncheck [**Select a Master Storage Server when starting**] in the [**Viewer Settings**] window (→ P. 5-14).

How to Start VK-Lite

Double-click on the icon [**VK-Lite Viewer v2.1**] on the desktop.

Alternatively, from the Windows [**Start**] menu > [**All Programs**] > [**WebView Livescope**] > [**Network Video Recorder VK Series v2.1**] > [**VK-Lite Viewer v2.1**].

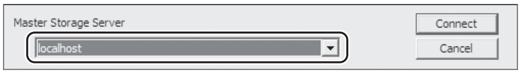
VK-Lite
Viewer v2.1

The following procedure is the same as VK-64/VK-16.

Launch by Connecting to the Localhost

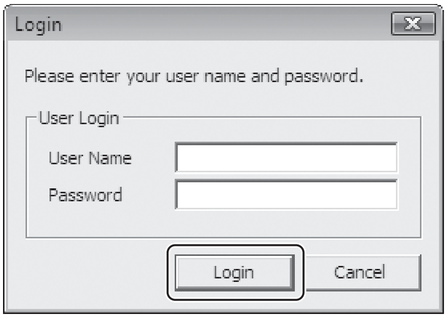
If you want to use the local PC for viewer as well as Master Storage Server, connect to recording server on local PC to start the Viewer.

1. Select [localhost] from the drop-down menu.



Master Storage Server: localhost

2. Click [Connect].
3. Enter your [User Name] and [Password], and click [Login].



Please enter your user name and password.

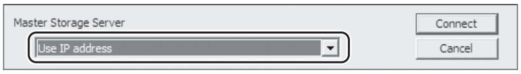
Note

- The default user name and password are as follows:
    User name: admin
    Password: NVR
  It is strongly recommended to change the user name and password after installation.
- The Viewer can be launched directly without displaying Start-up Screen and [**Login**] dialog (→ P. 5-11).

Launch Storage Server by Specifying the IP address

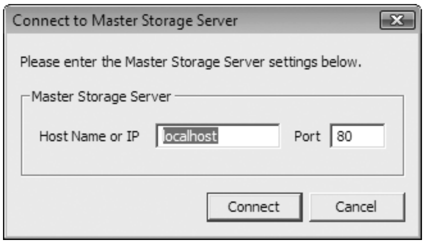
If you installed the Viewer and Storage Server on separate PC, specify an IP address of Storage Server and connect Viewer to the Storage Server.

1. Select [Use IP address] from the drop-down menu.



Master Storage Server: Use IP address

2. Click [Connect].
3. Enter the IP address or host name of the Master Storage Server in [Host Name or IP], and the port number in [Port].



Connect to Master Storage Server

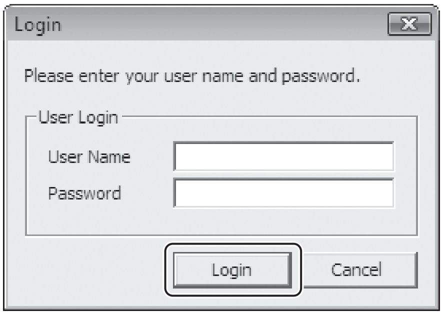
Please enter the Master Storage Server settings below.

Master Storage Server

Host Name or IP: localhost

Port: 80

4. Click [Connect].
5. Enter your [User Name] and [Password], and then click [Login].



Login

Please enter your user name and password.

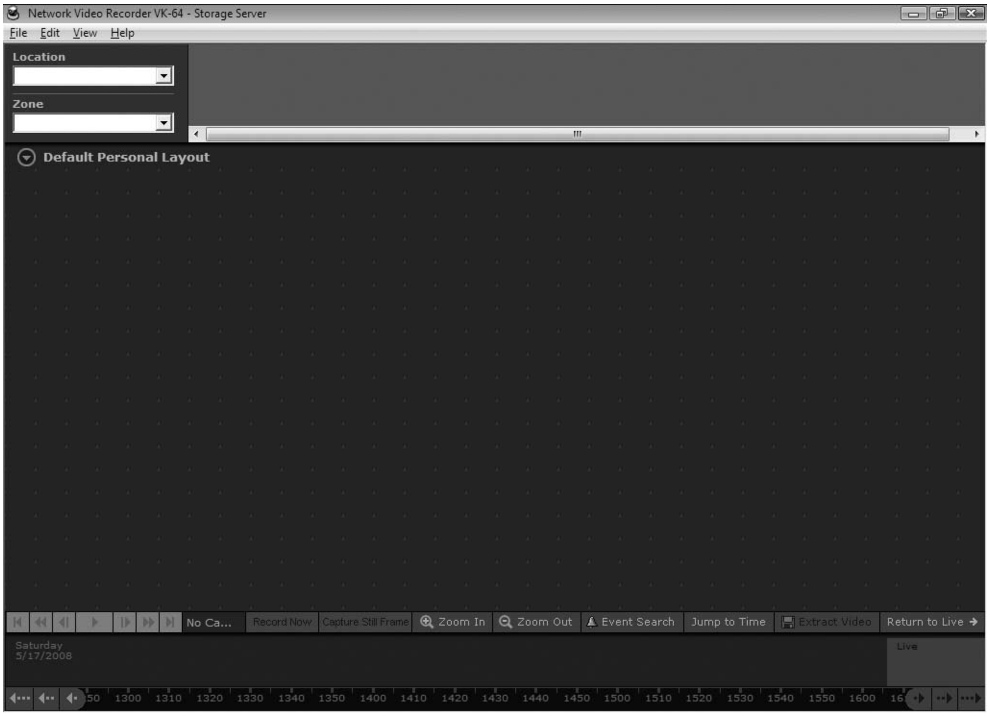
Note

- If you use a proxy server, you should change the Internet option settings in the following procedure:
  1. Select [**Start**] > [**Control Panel**] > [**Network and Internet**] > [**Internet Option**].
  2. Select the Connection tab.
  3. Click LAN settings.
     Change the proxy server settings.
- If using a proxy server between a Viewer and a Storage Server, it should not perform response buffering. The Proxy Server which is configured to perform response buffering may lead to delays in sending small amounts of data (such as events) from the Storage Server to the Viewer. You cannot use the Apache proxy server since it perform response buffering.
- You cannot send or receive audio when using a proxy server.

Tip

The dialog for entering the IP address will also be displayed even when connection to the Storage Server failed.

When the Viewer accesses to a Master Storage Server which has not been set up with camera server information, the entire Viewing Screen is initially blank as shown below. You should configure the Viewer using the [Configuration and Preferences] screen.


Network Video Recorder VK-64 - Storage Server
File
Edit
View
Help
Location
Zone
Default Personal Layout
No Ca...
Record Now
Capture Still Frame
Zoom In
Zoom Out
Event Search
Jump to Time
Extract Video
Return to Live
Saturday
5/17/2008
Live
50
1300
1310
1320
1330
1340
1350
1400
1410
1420
1430
1440
1450
1500
1510
1520
1530
1540
1550
1600
16

Note

It is strongly recommended that only one Administrator perform configuration on each network.

Access to the Configuration and Preferences screen

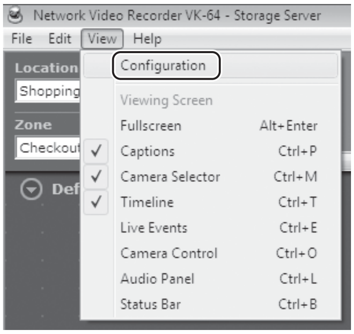
To open the [Configuration and Preferences] screen, the following operation should be performed.

In the Menu Bar, select [View] → [Configuration]

The menu bar is located at the top left of the Viewing Screen.

In the Menu Bar, select [View] → [Configuration].

The [Configuration and Preferences] screen appears.


Network Video Recorder VK-64 - Storage Server
File
Edit
View
Help
Location
Shopping
Zone
Checkout
Def
Configuration
Viewing Screen
Fullscreen Alt+Enter
✓ Captions Ctrl+P
✓ Camera Selector Ctrl+M
✓ Timeline Ctrl+T
Live Events Ctrl+E
Camera Control Ctrl+O
Audio Panel Ctrl+L
Status Bar Ctrl+B

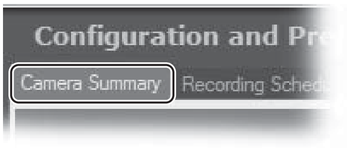
[Storage and Camera Server Summary] Windows

Use the [**Storage and Camera Server Summary**] screen to create a location and zone, to add the Storage Server, and to add the Camera Server.

Display the [Storage and Camera Server Summary] Windows

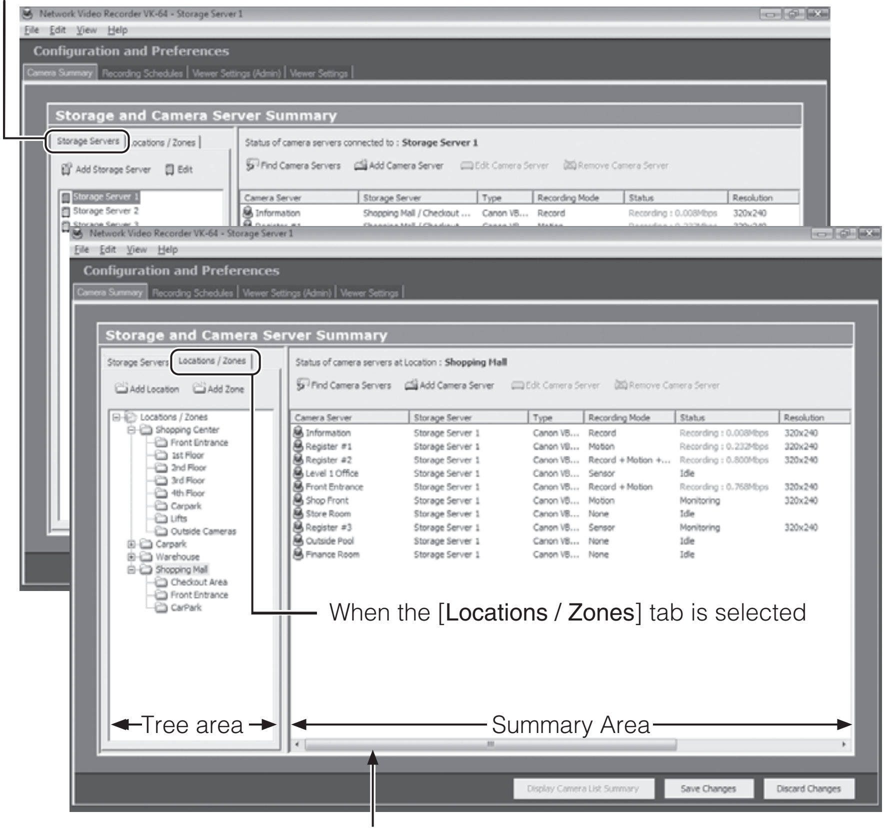
1. **Launch the** VK Viewer **and display the [Configuration and Preferences] screen.**
2. **Click the [Camera Summary] tab.**

   The [**Storage and Camera Server Summary**] windows appear.


Configuration and Pr
Camera Summary
Recording Sched

The window consists of two sub-windows which are opened by their respective tabs, [**Storage Servers**] and [**Locations/Zones**].

When the [**Storage Servers**] tab is selected


Network Video Recorder VK-64 - Storage Server 1
File
Edit
View
Help
Configuration and Preferences
Camera Summary
Recording Schedules
Viewer Settings (Admin)
Viewer Settings
Storage and Camera Server Summary
Storage Servers
Locations / Zones
Add Storage Server
Edit
Storage Server 1
Storage Server 2
Find Camera Servers
Add Camera Server
Edit Camera Server
Remove Camera Server
Add Location
Add Zone
Locations / Zones
Shopping Center
Front Entrance
1st Floor
2nd Floor
3rd Floor
4th Floor
Carpark
Lifts
Outside Cameras
Carpark
Warehouse
Shopping Mall
Checkout Area
Front Entrance
CarPark
Display Camera List Summary
Save Changes
Discard Changes

Status of camera servers connected to : **Storage Server 1**

Camera Server	Storage Server	Type	Recording Mode	Status	Resolution
Information	Shopping Mall / Checkout ...	Canon VB...	Record	Recording : 0.008Mbps	320x240

Status of camera servers at Location : **Shopping Mall**

Camera Server	Storage Server	Type	Recording Mode	Status	Resolution
Information	Storage Server 1	Canon VB...	Record	Recording : 0.008Mbps	320x240
Register #1	Storage Server 1	Canon VB...	Motion	Recording : 0.232Mbps	320x240
Register #2	Storage Server 1	Canon VB...	Record + Motion +...	Recording : 0.800Mbps	320x240
Level 1 Office	Storage Server 1	Canon VB...	Sensor	Idle	
Front Entrance	Storage Server 1	Canon VB...	Record + Motion	Recording : 0.768Mbps	320x240
Shop Front	Storage Server 1	Canon VB...	Motion	Monitoring	320x240
Store Room	Storage Server 1	Canon VB...	None	Idle	
Register #3	Storage Server 1	Canon VB...	Sensor	Monitoring	320x240
Outside Pool	Storage Server 1	Canon VB...	None	Idle	
Finance Room	Storage Server 1	Canon VB...	None	Idle	

When the [**Locations / Zones**] tab is selected

Tree area

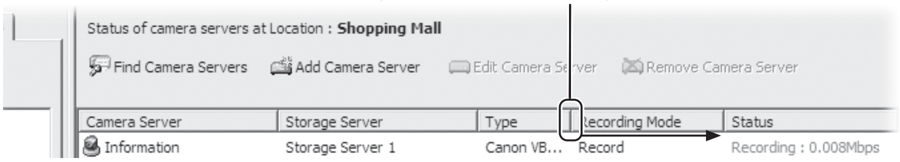
Summary Area

Click and drag scrollbar(s) to view any portions of the Summary Area that are not visible.

Note

If you are using the Viewer only, the Camera Server, Location/Zone, and Camera Type are only displayed in the Camera Server List.

Click and drag divider line to the right to show full items.

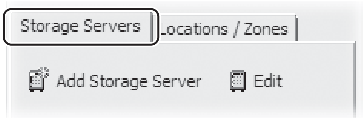

Status of camera servers at Location : Shopping Mall
Find Camera Servers
Add Camera Server
Edit Camera Server
Remove Camera Server
Camera Server
Storage Server
Type
Recording Mode
Status
Information
Storage Server 1
Canon VB...
Record
Recording : 0.008Mbps

[Storage Servers] and [Locations/Zones] options

The following options are available via the [Storage Servers] tab.

[Add Storage Server] - Allows you to register a Storage Server with the system (up to ten Servers are recommended).

[Edit] - Allows you to change the address of the selected Storage Server.

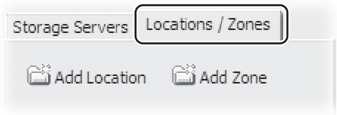

Storage Servers
Locations / Zones
Add Storage Server
Edit

Select a Storage Server from the tree in the left panel. The right panel will update with a list of Camera Servers recorded by the Storage Server you selected.

The following options are available via the [Locations/Zones] tab.

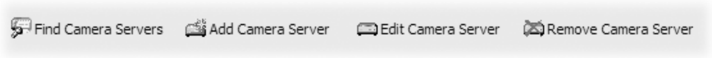
[Add Location] - Allows you to add a new location to the system.

[Add Zone] - Allows you to add zones to locations.


Storage Servers
Locations / Zones
Add Location
Add Zone

When you select a zone within a location in the left panel, a list of cameras in that zone is displayed in the right panel.

Other Functions in Both Tabs


Find Camera Servers
Add Camera Server
Edit Camera Server
Remove Camera Server

Camera server functions are located on the right-hand panel regardless of which tab is selected.

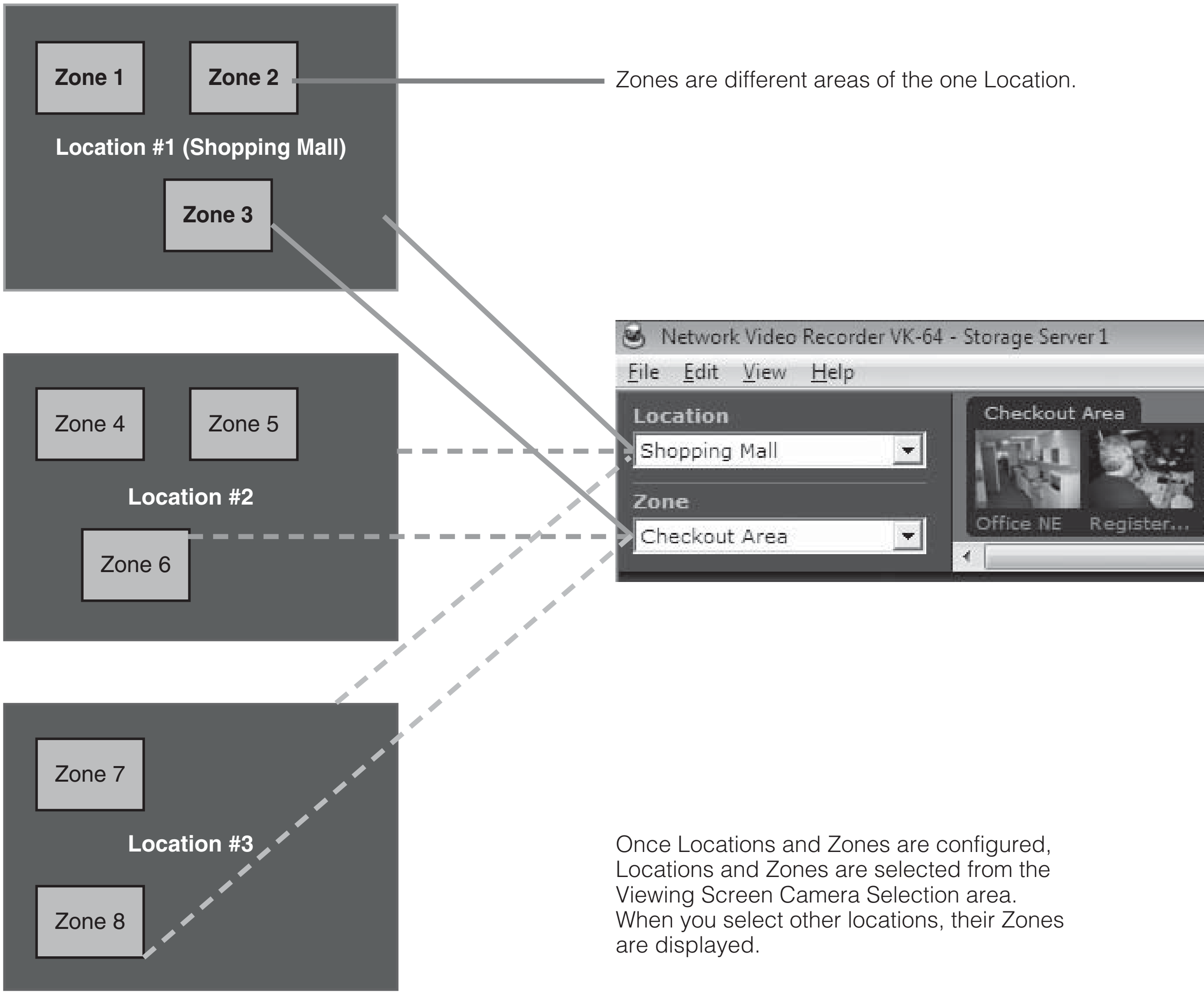
- [Find Camera Servers] - Allows you to initiate a network search for unlisted Camera Servers on the LAN and register it.
- [Add Camera Server] - Allows you to add a Camera Server to the system.
- [Edit Camera Server] - Allows you to edit an existing Camera Server's settings.
- [Remove Camera Server] - Allows you to remove a Camera Server from the system.

Location and Zone

Create a location and zone for the preparation of registering the Camera Server.

Cameras are grouped into Locations and Zones. Locations are for example, an office building, shop or school. Zones are a part of Locations, that is, a zone could be assigned o each floor in the office building and specific areas in a shop such as a cash register area.

The diagram below illustrates an example of physical Locations and Zones on a VK-64/VK-16 network. Viewer access is performed via the [**Location**] and [**Zone**] drop-down menus.


Zone 1
Zone 2
Location #1 (Shopping Mall)
Zone 3
Zone 4
Zone 5
Location #2
Zone 6
Zone 7
Location #3
Zone 8
Network Video Recorder VK-64 - Storage Server 1
File
Edit
View
Help
Checkout Area
Office NE
Register...

Location: Shopping Mall

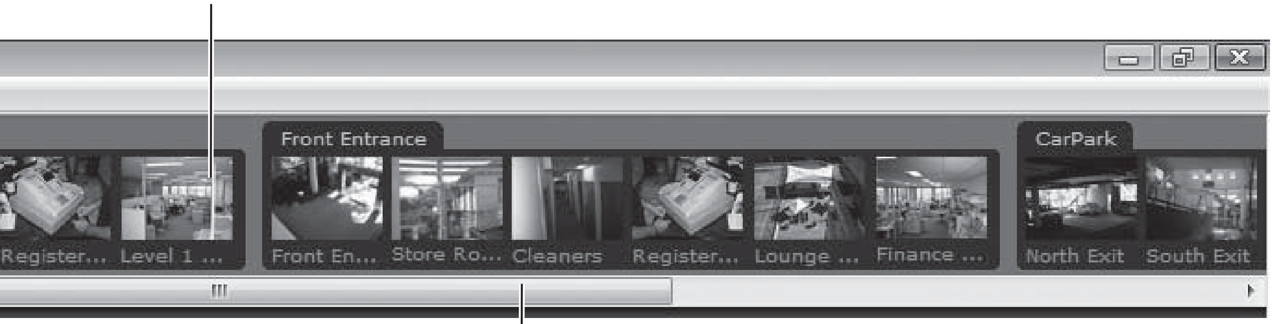
Zone: Checkout Area

Zones are different areas of the one Location.

Once Locations and Zones are configured, Locations and Zones are selected from the Viewing Screen Camera Selection area. When you select other locations, their Zones are displayed.

When a Location is selected from the drop-down menu at left, all of the Zones associated with the Location will appear to the right as camera thumbnail images.

This tab containing four thumbnail images indicates that there are four cameras in the Zone.


Register...
Level 1 ...
Front Entrance
Front En...
Store Ro...
Cleaners
Register...
Lounge ...
Finance ...
CarPark
North Exit
South Exit

This tab containing six thumbnail images indicates that there are six cameras in the Zone.

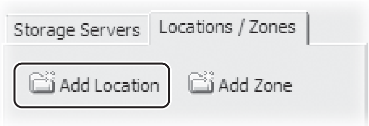
Note

- The Location/Zone hierarchy is independent of the grouping of cameras into Storage Servers. For example, a single Storage Server may record video from multiple Locations, and cameras from a single Location can be recorded to multiple Storage Servers.
- When multiple Storage Servers are used and a Storage Server which already has registered Camera Servers is changed to the Master Storage Server, thumbnails of registered Camera Servers may not be displayed. In this case, update the thumbnails by clicking [Connect] on the [Edit Camera Server] dialog for each Camera Server on the Master Storage Server.

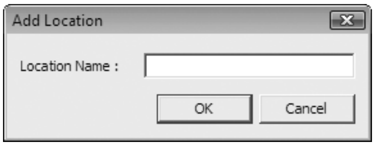
Add a Location and Zone

Step 1: Click [Add Location] on the [Locations/Zones] tab

1. In the [Camera Summary] window, select the [Locations/Zones] tab if it is not selected yet.
2. Click [Add Location] to bring up the [Add Location] dialog.


Storage Servers
Locations / Zones
Add Location
Add Zone

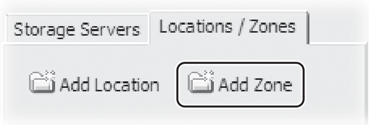
3. Enter the new location name (up to 20 characters), then click [OK].


Add Location

Location Name :

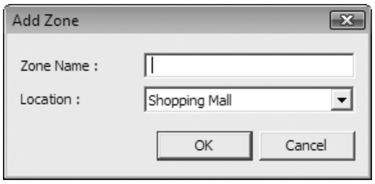
Step 2: Click [Add Location] on the [Locations/Zones] tab

1. In the [Camera Summary] window, select the [Locations/Zones] tab if it is not selected yet.
2. Click [Add Zone] to bring up the [Add Zone] dialog.


Storage Servers
Locations / Zones
Add Location
Add Zone

3. Enter the new zone name (up to 20 characters).
4. Select a location from the drop-down menu in the [Location] field, then click [OK].

   The selected zone will now appear in the specified Location folder.


Add Zone

Zone Name :

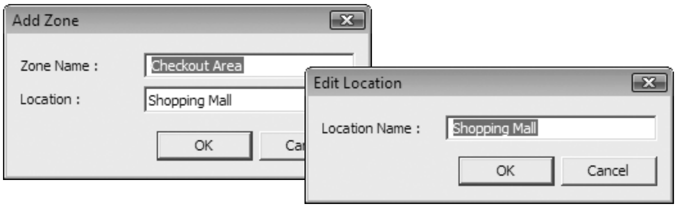
Location : Shopping Mall

Note

- If you want to add a Zone to another location not listed, you should first create the Location before you add the Zone.
- Each Location name must be unique and each Zone name within a Location must be unique as well.
- There is no limitation on the number of Zones and Locations that can be added.

Edit a Location and Zone

1. Double-click a location or zone. The [Edit Location] or [Edit Zone] dialog appears.
2. Change the settings and click [OK].



Add Zone

Zone Name : Checkout Area

Location : Shopping Mall

Edit Location

Location Name : Shopping Mall

Delete a Location and Zone

1. Click a location or zone in the list to highlight it and select [Delete] from the [Edit] menu.

   Alternatively, click a location or zone to select it, then press the [Delete] key on your keyboard.
2. A confirmation dialog will appear. Click [Yes].

   Click [No] to cancel deletion.

Add Storage Server VK-64/16

If you are using multiple Storage Servers, add each Storage Server as directed below. You need not perform these steps if you are using only one Storage Server and that Storage Server has already been added.

By adding the Storage Server, you can select the Camera Servers managed by each Storage Server from the Viewer screen.

Note

If you are using the Viewer only, the [**Storage Servers**] tab is not shown and you cannot add the Storage Server.

Tip

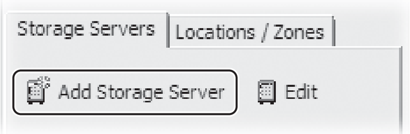
You can operate VK-64 with up to 10 Storage Servers, and up to 192 Camera Servers can be operated.

Display [Storage and Camera Server Summary] Windows

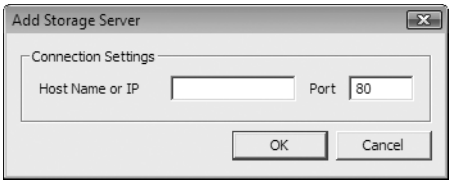
Launch the VK Viewer and display the [**Storage and Camera Server Summary**] window.

Add Storage Server

1. In the [Storage and Camera Server Summary], select the [Storage Servers] tab.
2. Click [Add Storage Server] to bring up the [Add Storage Server] dialog.



3. Enter connection settings and click [OK].



Host Name or IP

Port 80

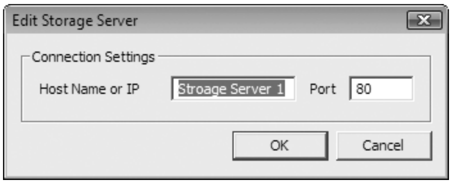
Note

- Do not add the same Storage Server more than once.
- If you add a Storage Server with a different configuration (such as one managed by another Master Storage Server), your original Locations and Zones will be invalid.
- You need to change Windows settings of a storage server to be added before if you are using Windows XP SP2 or Windows Server 2003. See "Notes on Operating Environment" (→ P. 1-12~P. 1-15).
- Do not change the port number.

Edit Storage Server

1. **In the [Storage and Camera Server Summary], select the [Storage Servers] tab.**

   A list of Storage Servers which have already been added is displayed.


Edit Storage Server
Connection Settings
Host Name or IP
Port
OK
Cancel

Host Name or IP: Stroage Server 1

Port: 80

2. **Double-click the Storage Server in the list.**

   Alternatively, select the Storage Server and click [**Edit**].

   This will bring up the [**Edit Storage Server**] dialog.

3. **Change the settings and click [OK].**

Note

- You should change the setting of Storage Server in case of the IP address of Storage Server has been changed.
- The Master Storage Server cannot be edited.

4. **To save changes, click [Save Changes] at the bottom right-hand corner of the [Camera Summary] window. Click [Discard Changes] to cancel any changes you have made.**

Save Changes
Discard Changes

Delete Storage Server

1. **In the [Storage and Camera Server Summary], select the [Storage Servers] tab.**

   A list of Storage Servers which have already been added is displayed.

2. **Click a Storage Server in the list to highlight it and select [Delete] from the [Edit] menu.**

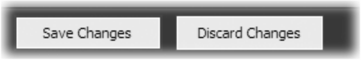
   Alternatively, click a Storage Server to select it, then press the [**Delete**] key on your keyboard.

3. **A confirmation dialog will appear. Click [Yes].**

   Click [**No**] to cancel deletion.

4. **To save changes, click [Save Changes] at the bottom right-hand corner of the [Camera Summary] window.**

   Click [**Discard Changes**] to cancel any changes you have made.



Note

- If a Storage Server is deleted, all Location, Zone, thumbnail and Layout information for cameras associated with this Storage Server will be deleted as well.
- The Master Storage Server cannot be edited.

Register Camera Server

After preparing for Camera Server registration (i.e., creating a location and zone, and adding the Storage Server), you should register the Camera Server.

You should register the desired Camera Server on the Storage Server if it has not been registered yet.

Register the Camera Server (by Search)

After registering the Camera Server, you can select the Camera Server from the [**Viewer**] screen.

Tip

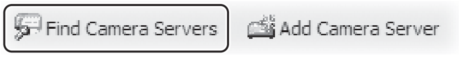
- Up to 192 Camera Servers can be operated. Up to 4 camera servers can be operated with VK-Lite.
- To connect to the Camera Server managed by another Storage Server, you should first add that Storage Server (→ P. 4-14).

Display the [Storage and Camera Server Summary] Windows

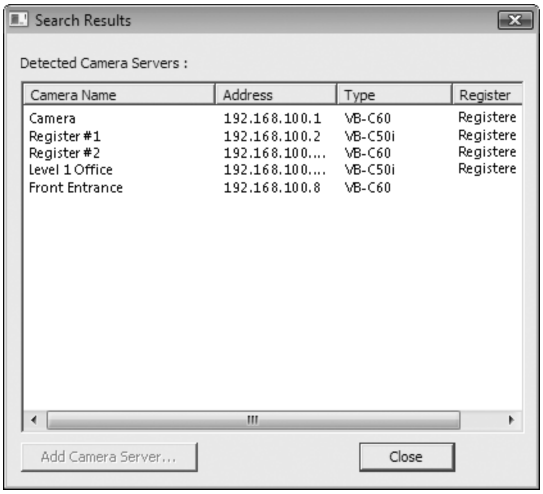
Launch the VK Viewer and display the [**Storage and Camera Server Summary**] window.

Find the Camera Server

In the [**Camera Summary**] window, click [**Find Camera Servers**] which is located above the right-hand panel.



The [**Search Results**] dialog appears and a list of detected Camera Servers will be displayed.


Search Results

Detected Camera Servers :

Camera Name	Address	Type	Register
Camera	192.168.100.1	VB-C60	Registere
Register #1	192.168.100.2	VB-C50i	Registere
Register #2	192.168.100....	VB-C60	Registere
Level 1 Office	192.168.100....	VB-C50i	Registere
Front Entrance	192.168.100.8	VB-C60	

Note

- When you initiate the [**Find Camera Servers**] function, PC searches the Viewer's local subnet for all Camera Servers connected to it. Camera Servers on another subnet cannot be searched and should be added using [**Add Camera Servers**] (→ P. 4-18).
- The camera names in the list are those specified by the Camera Server. See the Camera Server's User's Manual for more information on setting the name ("Camera Name" for VB-C500D, VB-C60, VB-C50i/VB-C50iR, VB-C50FSi, VB-C50Fi and VB-C10/VB-C10R, "Device Name" for VB150, "VB-C300NA" or "VB-C300PA" for VB-C300).

Tip

- If you cannot find the Camera Server, click [**Add Camera Server**] to add it.
- For the Camera Servers which have already been registered, [**Registered**] is displayed in the [**Register**] column. The [**Register**] columns for unregistered Camera Servers are blank.

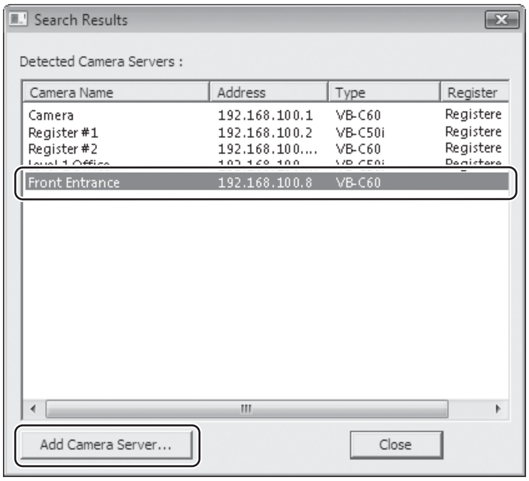
Add the Camera Server

1. In the [Search Results] dialog, click a Camera Server in the search results list to select it.
2. Click [Add Camera Server].

The [**Add Camera Server**] dialog appear.

Alternatively, double-click an item to bring up the [**Add Camera Server**] dialog.

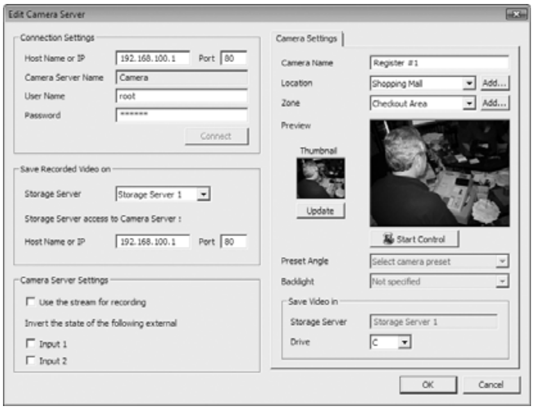
Continue settings on the [**Add Camera Server**] dialog.



Search Results

Detected Camera Servers :

Camera Name	Address	Type	Register
Camera	192.168.100.1	VB-C60	Registere
Register #1	192.168.100.2	VB-C50i	Registere
Register #2	192.168.100....	VB-C60	Registere
Front Entrance	192.168.100.8	VB-C60	



Edit Camera Server

Connection Settings
Host Name or IP: 192.168.100.1 Port: 80
Camera Server Name: Camera
User Name: root
Password: ******

Save Recorded Video on
Storage Server: Storage Server 1
Storage Server access to Camera Server :
Host Name or IP: 192.168.100.1 Port: 80

Camera Server Settings
☐ Use the stream for recording
Invert the state of the following external
☐ Input 1
☐ Input 2

Camera Settings
Camera Name: Register #1
Location: Shopping Mall
Zone: Checkout Area
Preset Angle: Select camera preset
Backlight: Not specified
Save Video in
Storage Server: Storage Server 1
Drive: C

Note

Recording schedules should be set in order to record video. Even though you click [**OK**], video recording will not start immediately.

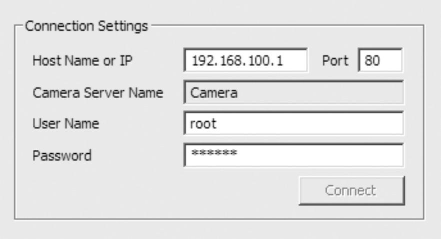
Tip

Contents of the [**Add Camera Server**] dialog will be different depending on the type of connected Camera Server.

Connect to Camera

1. Enter the Host Name or IP address in [Host Name or IP], then enter the port number for the Camera Server in [Port].

   The [**Host Name or IP**] should be 255 characters or less (each label, separated by a period, must be 63 characters or less), the IP address must be 15 characters or less (each label, separated by a period, must be 3 characters or less), and the [**Port**] must be a figure within the range from 1 to 65535.



Host Name or IP: 192.168.100.1 Port: 80
Camera Server Name: Camera
User Name: root
Password: ******

2. Enter the user name and password to connect to the Camera Server. Enter the user name in [User Name] and password in [Password].

   The settings are then saved to the Storage Server.

> **Note**
>
> - Use the user name and password configured on the Camera Server. If the user name and password are not sure, ask for the System Administrator of the Camera Server.
> - Storage servers and VK Viewers do not support IPv6.

3. Click [Connect].

   Once the Viewer has connected with the Camera Server, a tab is shown next to the [**Add Camera Server**] dialog.

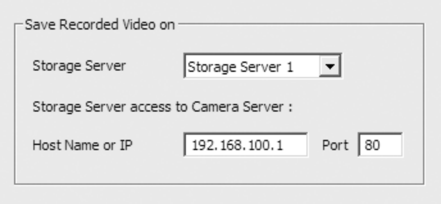
> **Note**
>
> - You must click [**Connect**] before clicking [**OK**] to close the dialog (the [**OK**] button is disabled until you do so).
> - When two or more cameras are used with VB150 (when [**Video Input**] is set to [**Multiple**]), two through four tabs are added. The number of tabs shown for a VB150 does not indicate the physical number of cameras connected, but indicates the number of cameras which have been enabled using the VB150 [**Camera and Video Settings**] Page. Please see Chapter 3, P. 36 of the VB150 User's Manual for more details.
> - If [**Video Input**] is set to [**Single**] for VB150, the camera name displayed as the Camera Server Name is the first camera name in the server's camera name list when [**Use Camera**] is selected on the [**Camera and Video Settings**] Page. Therefore, it is recommended that the Administrator should set the first camera name to be a general name, applicable to the entire Camera Server.
> - If you are using a VB150 with the [**Settings Web page URL**] other than the default setting "admin", a connection error occurs when you click [**Connect**]. Restore the default setting and try again.

> **Tip**
>
> If you have a Multi-Terminal Module VB-EX50 unit plugged into a VB-C50i/VB-C50iR, VB-C50FSi, VB-C50Fi and have configured the [**Use External Video Input**], video seen in the Viewer may be taken from cameras connected to the Multi-Terminal Module. Switch the video at the Admin Viewer as required.

Select a Storage Server

1. **Select a [Storage Server] from the drop-down menu which lists pre-configured Storage Servers and enter the Host Name or IP address in [Host Name or IP] and Port number in [Port].**

   The [**Host Name or IP**] must be 255 characters or less (each label, separated by a period, must be 63 characters or less) and the [**Port**] number must be a figure within the range from 1 to 65535.



Storage Server: Storage Server 1

Storage Server access to Camera Server :

Host Name or IP: 192.168.100.1 Port: 80

2. **If you do not want the Camera Server to record video, select [Do not record] from the drop-down menu of [Storage Server].**

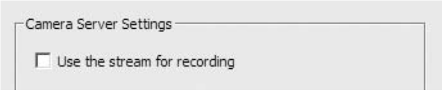
Note

- Recording schedules should be set in order to record video.
- There is a maximum number of 64 Camera Servers that can be registered on one Storage Server with VK-64 (or 16 cameras with Network Video Recorder VK-16).
- If you are using the Viewer only, the Storage Server cannot be configured.
- If you have changed the Camera Server's IP address, you also need to change the host names in the [**Connection Settings**] and [**Storage Server Settings**] dialogs.

Configure Recording Stream Usage (VB-C500D, VB-C60)

VB-C500D and VB-C60 has a video recording stream function that temporarily saves images in the camera memory as a function to handle packets dropped due to network interruptions, etc.

To use the recording streams, select the [**Use the recording-mode stream**] checkbox.



☐ Use the stream for recording

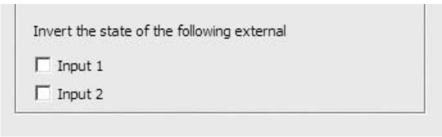
Note

- The recording streams can only be used for JPEG recording at 10 fps or less. They cannot be used for JPEG recording at rates higher than 10 fps or for MPEG-4 recording.
- The recording streams cannot accept requests from multiple Storage Server.
  If recording stream requests are made to one VB-C500D or VB-C60 from multiple clients, the second and subsequent requests return errors and connect in normal mode.
- The recording stream supports network interruption due to the video-size, image quality, and frame rate.

Configure External Device Input

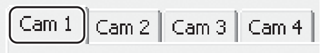
To switch On or Off the external device input, check the [**Invert the state of the following external**] option.

One or more inputs may be shown depending on the type of the Camera Server. It is not necessary to change this setting if it is not required.

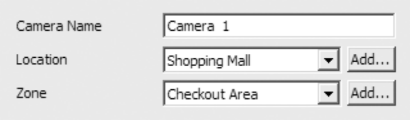

Invert the state of the following external
☐ Input 1
☐ Input 2

Assign a location and zone

1. **If multiple [Cam] tabs are shown to the right of the screen, select a tab for the Camera Server to edit settings.**


Cam 1
Cam 2
Cam 3
Cam 4

2. **Change the name of the Camera Server in the [Camera Name] field as required.**



Camera Name: Camera 1
Location: Shopping Mall
Zone: Checkout Area

Note

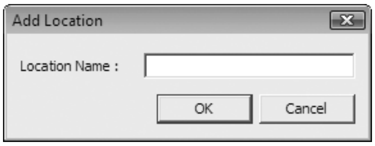
- Enter the [**Camera Name**] in up to 15 characters.
- Changing the [**Camera Name**] setting here does not change the camera name of the Camera Server.

3. **In the [Location] field, select a location for the Camera Server from the drop-down menu.**
4. **In the [Zone] field, select a zone for the Camera Server from the drop-down menu.**

If necessary, click [**Add**] to add another Location or Zone.

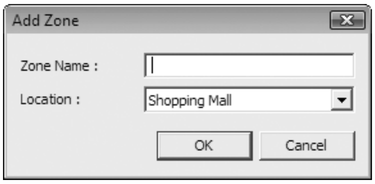
The [**Add Location**] or [**Add Zone**] dialog opens.

Enter the [**Location Name**] or [**Zone Name**] and click [**OK**].


Add Location
Location Name :
OK
Cancel

When you add a Zone in the [**Add Zone**] dialog, you should also add it to a Location in the same dialog.

Select a location from the drop-down menu.

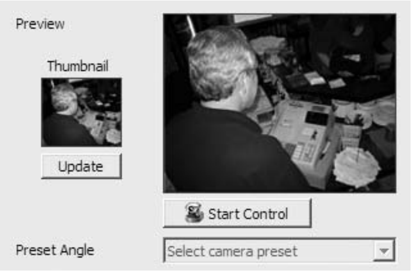

Add Zone
Zone Name :
OK
Cancel

Location : Shopping Mall

See P. 4-12 for how to add locations and zones.

Update or Set the Viewer Thumbnails

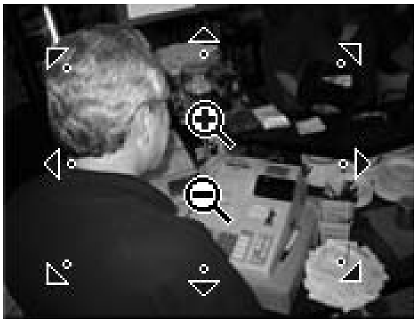
1. In the [Preview] area, click [Update] to recapture an image used for the thumbnail of the Viewer screen.
2. To change the camera angle or zoom magnification by using the mouse, click [Start Control].



Move the mouse cursor around the image. Arrows will appear and you can click and drag the cursor in that direction. The preview will change accordingly. When you move the mouse cursor to the center of the image, a zoom in or zoom out control will appear.

Hold down the mouse on "+" to zoom in.

Hold down the mouse on "-" to zoom out.



Note

- When using VB-C500D, VB-C50FSi and VB-C50Fi, pan and tilt operation is not available. You cannot use zoom operations with the VB-C500D if digital zoom is set to [Disable] on the camera.
- If a fixed camera or an external camera such as VC-C50i is connected to VB-C50i, you cannot use pan, tilt, and zoom operations.

Tip

If you want to change the thumbnail and the preview area is blank (and the [Update] and [Start Control] buttons are disabled), click [Connect] (located in the [Connection Settings] field).

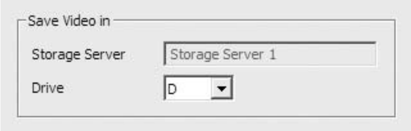
3. Select a pre-defined camera position (if already configured) from the [Preset Angle] drop-down menu.

Tip

Presets should be configured in advance. Please see the Camera Server User's Manual for details on setting camera presets.

Select the drive to save video data

In the [**Drive**] drop-down menu, select a hard disk drive on the Storage Server.


Save Video in

Storage Server: Storage Server 1
Drive: D

Note

- Network drives registered via Storage Server Configuration are also shown on the [**Drive**] drop-down menu. See "Adding/Removing a Network Drive" (→ P. 3-11) for the details.
- If you are using the Viewer only, the drive cannot be configured.

Close the [Add Camera Server] Dialog

Click [**OK**] to close the [**Add Camera Server**] dialog.

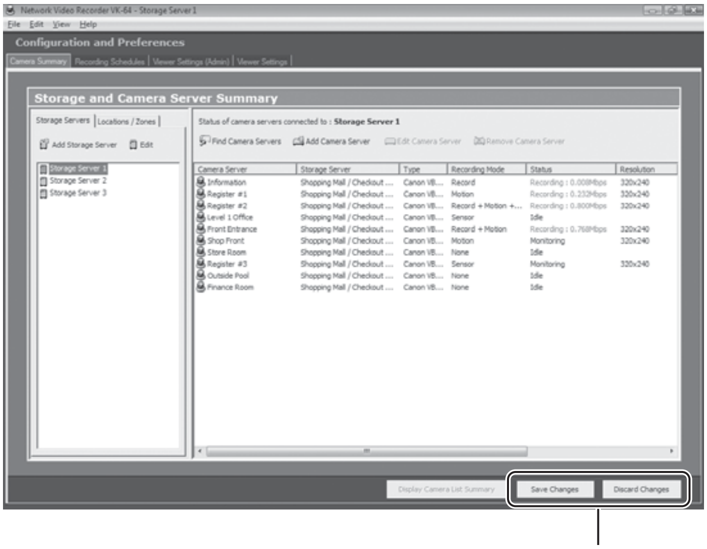
If you open the [**Add Camera Server**] dialog from the [**Search Results**] screen, you will return to the [**Search Results**] screen.

In this case, click [**Cancel**] to return to the [**Camera Summary**] window.

If you clicked [**Add Camera Server**] to open the [**Add Camera Server**] dialog, you will return to the [**Camera Summary**] window.

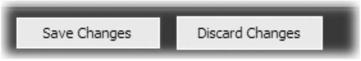
Save Settings

To save Camera Server settings, click [**Save Changes**] at the bottom right-hand corner of the [**Camera Summary**] window.


Network Video Recorder VK-64 - Storage Server1
File
Edit
View
Help
Configuration and Preferences
Camera Summary
Recording Schedules
Viewer Settings (Admin)
Viewer Settings
Storage and Camera Server Summary
Storage Servers
Locations / Zones
Add Storage Server
Edit
Storage Server 1
Storage Server 2
Storage Server 3
Find Camera Servers
Add Camera Server
Edit Camera Server
Remove Camera Server
Display Camera List Summary
Save Changes
Discard Changes

Status of camera servers connected to : **Storage Server 1**

Camera Server	Storage Server	Type	Recording Mode	Status	Resolution
Information	Shopping Mall / Checkout	Canon VB....	Record	Recording : 0.008Mbps	320x240
Register #1	Shopping Mall / Checkout	Canon VB....	Motion	Recording : 0.232Mbps	320x240
Register #2	Shopping Mall / Checkout	Canon VB....	Record + Motion +...	Recording : 0.800Mbps	320x240
Level 1 Office	Shopping Mall / Checkout	Canon VB....	Sensor	Idle	
Front Entrance	Shopping Mall / Checkout	Canon VB....	Record + Motion	Recording : 0.768Mbps	320x240
Shop Front	Shopping Mall / Checkout	Canon VB....	Motion	Monitoring	320x240
Store Room	Shopping Mall / Checkout	Canon VB....	None	Idle	
Register #3	Shopping Mall / Checkout	Canon VB....	Sensor	Monitoring	320x240
Outside Pool	Shopping Mall / Checkout	Canon VB....	None	Idle	
Finance Room	Shopping Mall / Checkout	Canon VB....	None	Idle	


Save Changes
Discard Changes

The bottom right-hand corner of the [**Camera Summary**] window consists of two buttons, [**Save Changes**] and [**Discard Changes**].

Click [**Discard Changes**] to cancel any changes you have made.

Return to the Viewer Screen

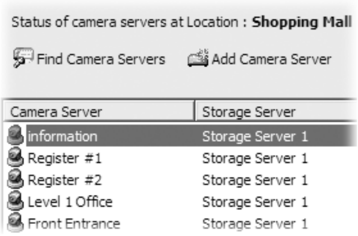
If you wish to return to the Viewer Screen, select [**Viewer Screen**] from the [**View**] menu bar.

Edit Camera Server

The right-hand portion of the [**Camera Summary**] window features [**Edit Camera Server**] for Editing the Camera Server(s) on your system, regardless of which tab you have selected ([**Storage Servers**] or [**Locations/Zones**]). The same dialog as [**Add Camera Server**] (→ P. 4-18) appears.

Start Editing Camera Server

1. **In the [Camera Server] list, click a Camera Server to highlight it.**

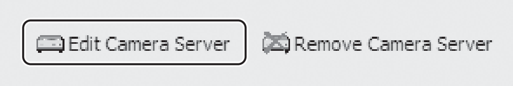


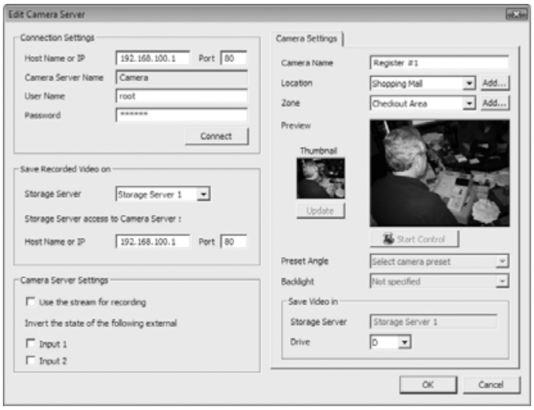
Status of camera servers at Location : **Shopping Mall**

Camera Server	Storage Server
information	Storage Server 1
Register #1	Storage Server 1
Register #2	Storage Server 1
Level 1 Office	Storage Server 1
Front Entrance	Storage Server 1

2. **Click [Edit Camera Server].**

   The [**Edit Camera Server**] The Edit Camera Server is identical to the [**Add Camera Server**] dialog (you can also open the dialog by double-clicking the menu).





Edit Camera Server

Connection Settings
Host Name or IP: 192.168.100.1 Port: 80
Camera Server Name: Camera
User Name: root
Password: ******

Save Recorded Video on
Storage Server: Storage Server 1
Storage Server access to Camera Server :
Host Name or IP: 192.168.100.1 Port: 80

Camera Server Settings
☐ Use the stream for recording
Invert the state of the following external
☐ Input 1
☐ Input 2

Camera Settings
Camera Name: Register #1
Location: Shopping Mall
Zone: Checkout Area
Preset Angle: Select camera preset
Backlight: Not specified
Save Video in
Storage Server: Storage Server 1
Drive: D

Change the Camera Server's Settings

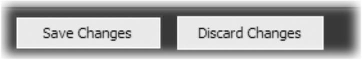
Change the Camera Server settings as directed inP. 4-17 through P. 4-19.

Finish Editing

Click [**OK**] when finished. The [**Camera Summary**] window reappears.

Save Edit Contents

To save edited Camera Server settings, click [Save Changes] at the bottom right-hand corner of the [Camera Summary] window.


Save Changes
Discard Changes

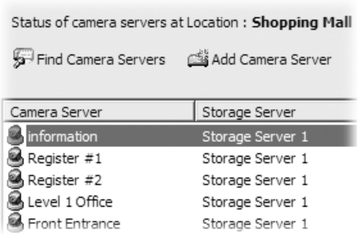
Click [Discard Changes] to cancel any modifications you have made.

Delete Camera Server

The right-hand portion of the [Camera Summary] window features [Remove Camera Server] for removing the Camera Server(s) from your system, regardless of which tab you have selected ([Storage Servers] or [Locations/Zones]).

Delete a Camera Server

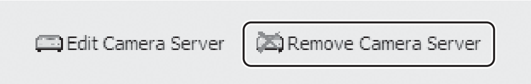
1. In the [Camera Server] list, click a Camera Server to highlight it.


Find Camera Servers
Add Camera Server

Status of camera servers at Location : **Shopping Mall**

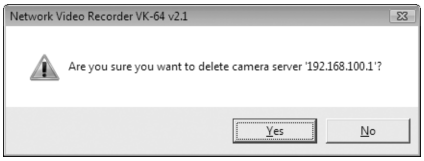
Camera Server	Storage Server
information	Storage Server 1
Register #1	Storage Server 1
Register #2	Storage Server 1
Level 1 Office	Storage Server 1
Front Entrance	Storage Server 1

2. Click [Remove Camera Server] (you can also press the [Delete] key on your keyboard).


Edit Camera Server
Remove Camera Server

3. A confirmation dialog will appear. Click [Yes].

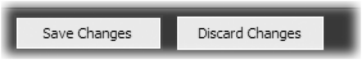
   Click [No] to cancel deletion.


Network Video Recorder VK-64 v2.1
Yes
No

Are you sure you want to delete camera server '192.168.100.1'?

Reflect Deletion

To reflect Camera Server deletion, click [Save Changes] at the bottom right-hand corner of the [Camera Summary] window.


Save Changes
Discard Changes

Click [Discard Changes] to cancel any modifications you have made.

Overview of Recording Schedule Setting

After you have registered the Camera Server, you can set recording schedules.

Note

- If you are using the Viewer only, you cannot set recording schedules.
- Be sure to perform operational tests after setting schedules.

You can record videos by specifying **when** and **what** to record with recording schedule function.

When - Select from the following:

- Specified day of the week (Normal Schedule)
- Specific day (Special Day Schedule)

Tip

- Use a Normal Schedule for normal recording operation.
- See P. 4-30 for how to use the [**Normal Schedule**] dialog.

Example of [**Normal Schedule**]:	Record video from 7:00 A.M. through 8:30 A.M. on every Wednesday and Friday.

- See P. 4-62 for how to use the [**Special Day Schedule**] dialog.

Example of [**Special Day Schedule**]:	Record video during the winter holidays from December 28 through January 3.

What - Select one or more from the following:

- Record video throughout the specified period of time (Continuous recording)
- Record video by Motion Detection during the specified time period (Motion Detection recording)
- Record video by sensor during the specified time period (Sensor Event recording)

The Motion Detection recording starts recording video when a motion has been detected. See "Set Motion Detection Recording" (→ P. 4-46) for details.

The Sensor Event recording starts recording video when a sensor input has occurred. See "Set Sensor Event Recording" (→ P. 4-53) for details.

Note

Only continuous recording is available with VK-Lite.

Tip

One recording schedule can have Continuous, Motion Detection, and Sensor Event recording settings. You can record a Camera Server continuously at 1 frame per second and, for example, set recording to increase to 5 frames per second when motion occurs.

Recording Schedule

Two types of recording schedules are available: Normal Schedule and Special Day Schedule.

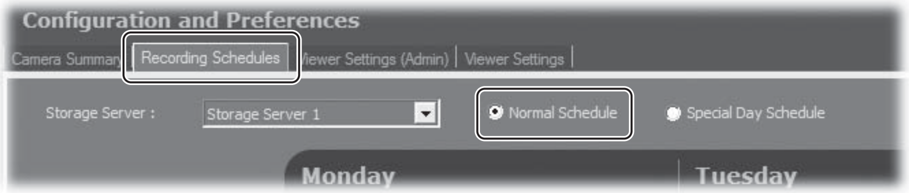
For both types of schedules, you must set the recording schedule for each Camera Server in the [Recording Schedules] screen.

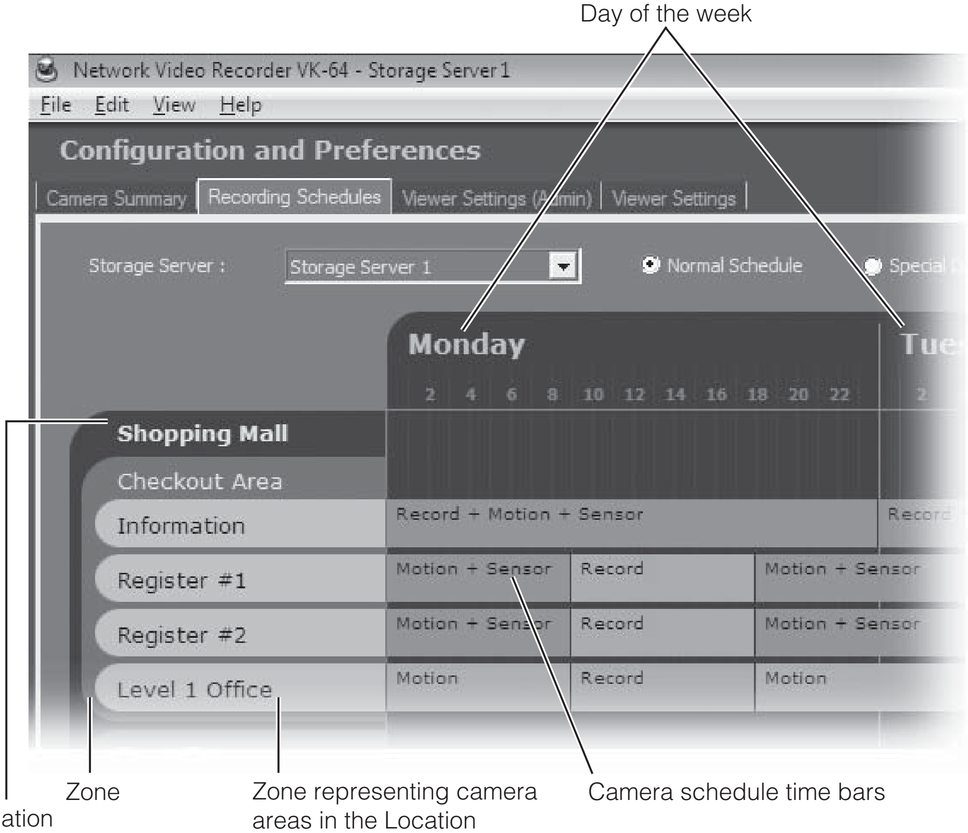
Display the [Recording Schedules] screen

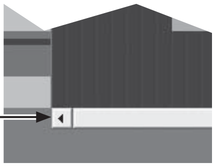
1. Launch the VK Viewer and in the Menu Bar, select [View] → [Configuration].

   The [Configuration and Preferences] screen appears.

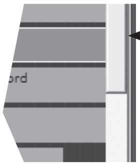
2. Click the [Recording Schedules] tab to display the [Recording Schedules] screen.
3. Click the [Normal Schedule] tab to display the [Normal Schedules] screen.


Configuration and Preferences
Camera Summary
Recording Schedules
Viewer Settings (Admin)
Viewer Settings
Storage Server :
Storage Server 1
Normal Schedule
Special Day Schedule
Monday
Tuesday


Day of the week
Network Video Recorder VK-64 - Storage Server1
File
Edit
View
Help
Configuration and Preferences
Camera Summary
Recording Schedules
Viewer Settings (Admin)
Viewer Settings
Storage Server :
Storage Server 1
Normal Schedule
Special
Monday
Tue
2 4 6 8 10 12 14 16 18 20 22
Shopping Mall
Checkout Area
Information
Register #1
Register #2
Level 1 Office
Record + Motion + Sensor
Motion + Sensor
Record
Motion
Zone
Location
Zone representing camera areas in the Location
Camera schedule time bars



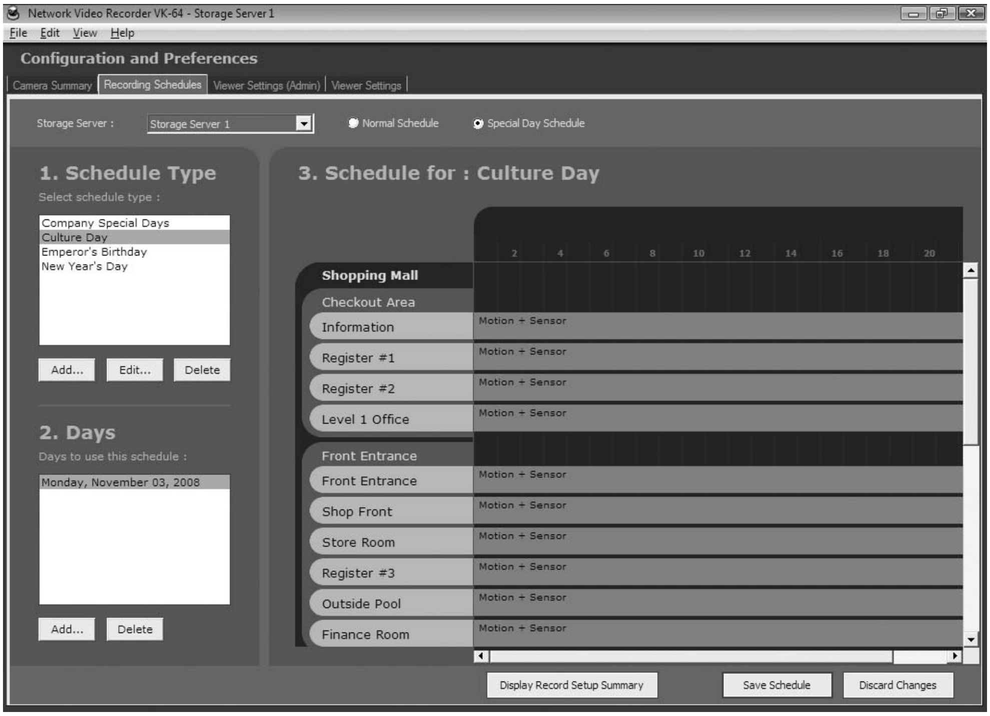
Click and drag the horizontal scroll-bar to the right to view other schedule days.



Click and drag the vertical scroll-bar downward to view any other zones.

4. **VK-64/16**

Click the [**Special Day Schedule**] tab to display the [**Special Day Schedule**] screen.



Network Video Recorder VK-64 - Storage Server 1
File
Edit
View
Help
Configuration and Preferences
Camera Summary
Recording Schedules
Viewer Settings (Admin)
Viewer Settings
Normal Schedule
1. Schedule Type
Select schedule type :
Add...
Edit...
Delete
2. Days
Days to use this schedule :
Add...
Delete
2
4
6
8
10
12
14
16
18
20
Shopping Mall
Checkout Area
Information
Register #1
Register #2
Level 1 Office
Front Entrance
Front Entrance
Shop Front
Store Room
Register #3
Outside Pool
Finance Room
Display Record Setup Summary
Save Schedule
Discard Changes

Storage Server : Storage Server 1

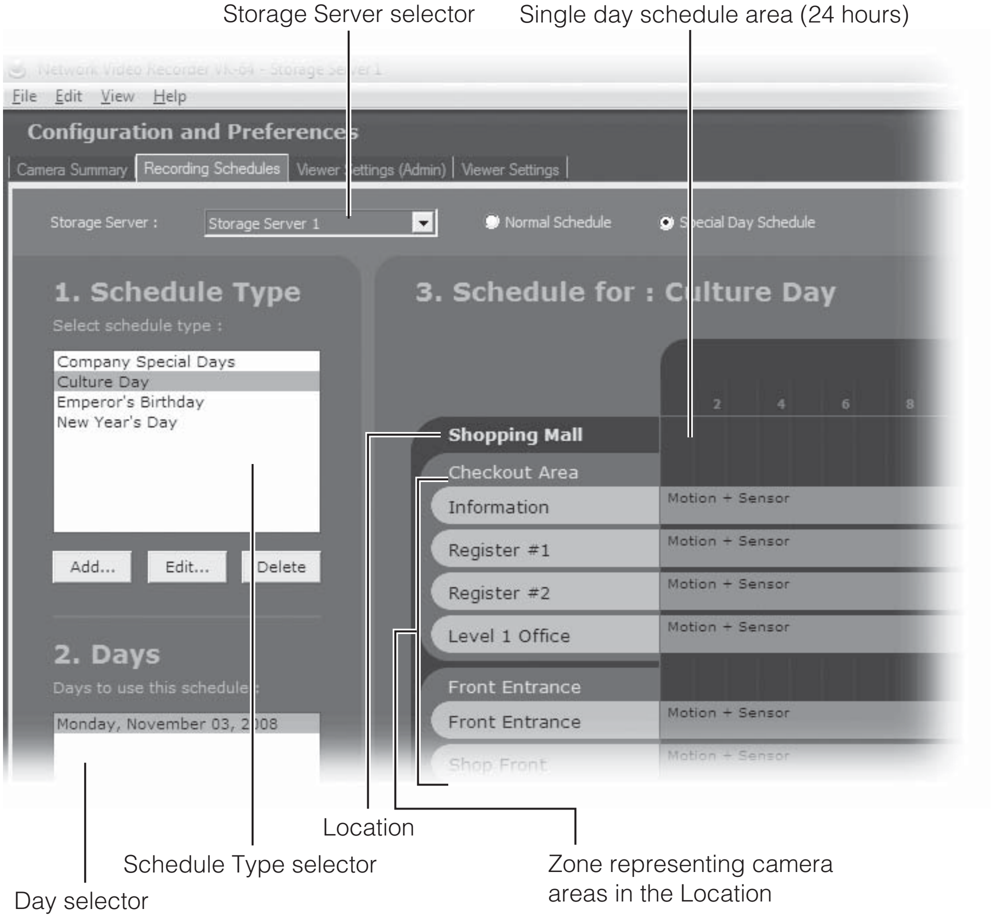
● Special Day Schedule

Company Special Days
Culture Day
Emperor's Birthday
New Year's Day

Monday, November 03, 2008

3. Schedule for : Culture Day

Information	Motion + Sensor
Register #1	Motion + Sensor
Register #2	Motion + Sensor
Level 1 Office	Motion + Sensor
Front Entrance	Motion + Sensor
Shop Front	Motion + Sensor
Store Room	Motion + Sensor
Register #3	Motion + Sensor
Outside Pool	Motion + Sensor
Finance Room	Motion + Sensor


Storage Server selector
Single day schedule area (24 hours)
Location
Schedule Type selector
Day selector
Zone representing camera areas in the Location

Network Video Recorder VK-64 - Storage Server 1

File Edit View Help

Configuration and Preferences

Camera Summary | Recording Schedules | Viewer Settings (Admin) | Viewer Settings

Storage Server : Storage Server 1 ○ Normal Schedule ● Special Day Schedule

1. Schedule Type

Select schedule type :

Company Special Days
Culture Day
Emperor's Birthday
New Year's Day

Add... Edit... Delete

2. Days

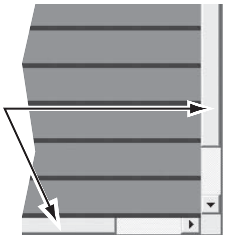
Days to use this schedule :

Monday, November 03, 2008

3. Schedule for : Culture Day

2 4 6 8

Shopping Mall
Checkout Area
Information — Motion + Sensor
Register #1 — Motion + Sensor
Register #2 — Motion + Sensor
Level 1 Office — Motion + Sensor
Front Entrance
Front Entrance — Motion + Sensor
Shop Front — Motion + Sensor


Click and drag the scroll-bar(s) to view more schedules if necessary.

Note

- The scheduling area functions the same as the Normal Recording Schedule but only covers a single day (from 00:00 hrs. to 24:00 hrs). To have a special day schedule run over a long weekend (Fri, Sat & Sun), all dates of three days must be added to the list of days to use the schedule.
- When Special Day Schedules are running, Normal Schedules are disabled. If an invalid schedule exists, the following warning message will be displayed. "There is a camera to which the recording schedule is not registered. Is it OK to leave it like this?"

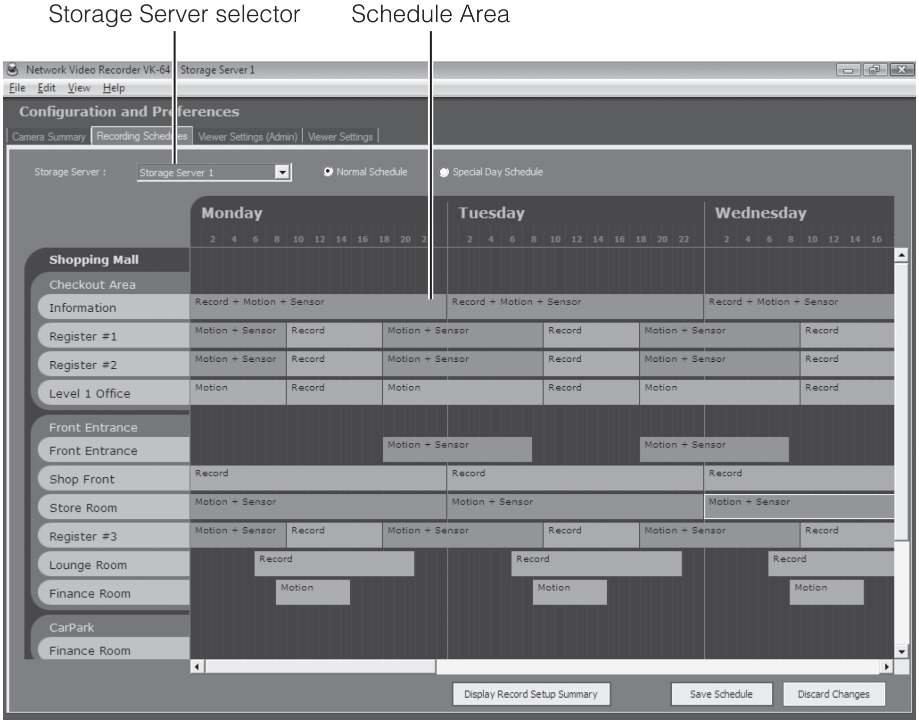
Set Normal Schedule

The [**Normal Schedule**] consists of:

- **[Storage Server] list** - Select the Storage Server to edit the recording schedule.

  When the [**Recording Schedules**] window first appears, the first Storage Server in the list is shown with its associated schedule to the right.

- **Schedule Area** - Set up standard day-to-day recording schedules settings.


Storage Server selector
Schedule Area
Network Video Recorder VK-64 Storage Server 1
File Edit View Help
Configuration and Preferences
Camera Summary
Recording Schedules
Viewer Settings (Admin)
Viewer Settings
Storage Server :
Storage Server 1
Normal Schedule
Special Day Schedule
Monday
Tuesday
Wednesday
Shopping Mall
Checkout Area
Information
Register #1
Register #2
Level 1 Office
Front Entrance
Front Entrance
Shop Front
Store Room
Register #3
Lounge Room
Finance Room
CarPark
Finance Room
Record + Motion + Sensor
Motion + Sensor
Record
Motion
Display Record Setup Summary
Save Schedule
Discard Changes

Create Normal Schedule

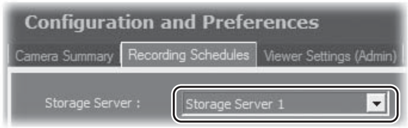
Display the [Recording Schedules] screen

1. In the Menu Bar, select [View] → [Configuration].

   The [**Configuration and Preferences**] screen appears.
2. Click the [Recording Schedules] tab to display the [Recording Schedules] screen.
3. Click the [Normal Schedule] tab to display the [Normal Schedule] screen.

Change the Storage Server

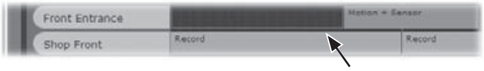
If you wish to display another Storage Server's schedule, click the [**Storage Server**] menu, otherwise proceed to the next step.


Configuration and Preferences
Camera Summary
Recording Schedules
Viewer Settings (Admin)
Storage Server :
Storage Server 1

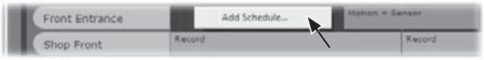
The menu may list more assigned Storage Servers. If you select another Storage Server, the Schedule Area will refresh and associated schedule zones will be shown.

Create a Normal Schedule

Click and drag a time period for a camera name and release the mouse button. The [**Add Schedule Item**] dialog is displayed.


Front Entrance
Shop Front
Motion + Sensor
Record
Record

Alternatively, right-click anywhere in the Schedule Area alongside a camera name and click [**Add Schedule**] from the context menu.

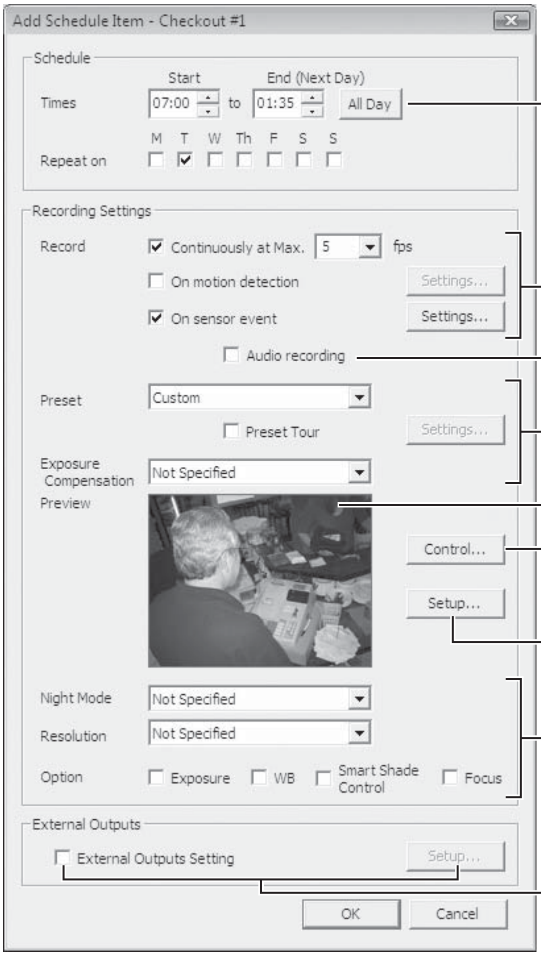

Front Entrance
Shop Front
Add Schedule...
Motion + Sensor
Record
Record

You can click and drag the schedule area of several cameras to bring up the [**Add Schedule Item - multiple cameras**] dialog. This allows you to easily set schedules for multiple cameras. Once created, settings for each camera can be customized later.

Information
Register #1
Register #2

Note

- The shortest recording time for a schedule is 15 minutes.
- You cannot create overlapped schedule items within a single Camera Sever.



Add Schedule Item - Checkout #1

Schedule

Times: Start 07:00 to End (Next Day) 01:35 All Day

Repeat on: M ☐ T ☑ W ☐ Th ☐ F ☐ S ☐ S ☐

Recording Settings

Record: ☑ Continuously at Max. 5 fps

☐ On motion detection Settings...

☑ On sensor event Settings...

☐ Audio recording

Preset: Custom

☐ Preset Tour Settings...

Exposure Compensation: Not Specified

Preview

Control...

Setup...

Night Mode: Not Specified

Resolution: Not Specified

Option: ☐ Exposure ☐ WB ☐ Smart Shade Control ☐ Focus

External Outputs

☐ External Outputs Setting Setup...

OK Cancel

Set start and end times and the day of the week (→ P. 4-33).

Set frame rate, enable Motion Detection and sensor event recording (→ P. 4-34).

Selec to record audio (→ P. 4-34).

Set the preset camera angle and exposure compensation (→ P. 4-35).

Move the mouse cursor in the Preview area to change the camera angle (→ P. 4-22).

Control the camera via the [**Camera Control**] Panel (→ P. 5-39).

The Top page of the Camera Server is displayed after Internet Explorer launches.

Set the [**Night Mode**], [**Resolution**] and [**Options**] (→ P. 4-37).

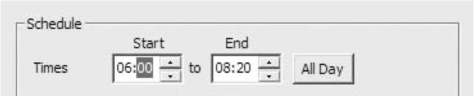
Set the external device output (→ P. 4-39).

* The number of external devices available for setting depends on the type of the Camera Server.

Configuration is discussed on the following pages.

Set the recording period

Click the hours or minutes fields to select, then click the up/down arrows or directly enter a value to change time.



Schedule

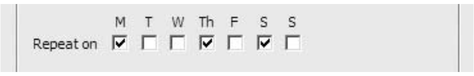
	Start		End	
Times	06:00	to	08:20	All Day

Tip

- Time period could be set for overnight recording such as [**Start**] 22:00 to [**End**] 08:00.
- Click [**All Day**] if you want 24 hour recording. The [**Start**] and [**End**] times will be set at 00:00 respectively.

Select a day of the week to record video

In the [**Repeat on**] area, check the days you wish to repeat the recording period you have set in the [**Times**] area above.



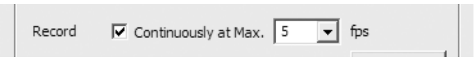
	M	T	W	Th	F	S	S
Repeat on	☑	☐	☐	☑	☐	☑	☐

Note

- If you have defined any special day schedules, at that time the schedules will override normal schedule times for the whole day.
- Times are given in 24 hours.
- If Camera Server has been configured with [**Restrict Service Time**], VK-64/VK-16 will not be able to record from the Camera Server during restricted times.
- The time zone used for the recording schedule will be the time of PC where the Storage Server is running.
- The Storage Server will adjust for Daylight Savings if configured in the operating system.

Set Continuous Recording

1. **Click the [Continuously at Max.] box if you want to set continuous recording for the duration of the time period.**



Record ☑ Continuously at Max. 5 fps

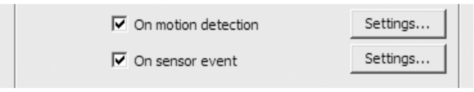
2. **Select a frame rate for recorded video from the drop-down menu, or input a value from the keyboard.**

   You can set the frame rate from 0.1 frames per second to 30 frames per second. The default is 5 frames par seconds. The upper limit is 5 frames per second with VK-Lite.

   See P. 4-45 for details of Continuous Recording.

Configure Motion Detection Recording and Sensor Recording Settings VK-64/16

1. Check the [On motion detection] box if you want recording activated when motion is detected during this time period.


☑ On motion detection

☑ On sensor event

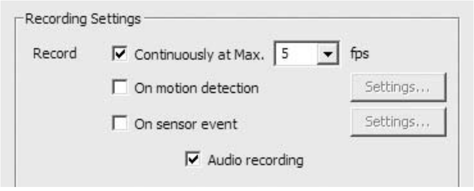
2. Check the [On sensor event] box if you want recording activated from a sensor event during this time period.
3. Click [Settings] to change the details.

   See P. 4-45 and P. 4-53 for details of Motion Detection and Sensor Event recordings.

Configure Audio Recording

If you want to record audio when video recording mode is selected, select the [**Audio recording**] checkbox.

Audio-only recording is not available, so Audio recording should be set as an addition to video recording.


Recording Settings

Record ☑ Continuously at Max. 5 fps

☐ On motion detection

☐ On sensor event

☑ Audio recording

Note

- Audio recording is available on camera servers that support audio transmission function (VB-C500D, VB-C60, VB-C300, VB-C50i, VB-C50iR, VB-C50FSi). On camera servers that do not support the function, the Audio recording checkbox is disabled.
- Audio recording is enabled when video recording mode is on. It is not possible to setup schedules that only record audio without recording video.
- When the resolution (→ P. 4-38) is set to JPEG, recorded video and the audio are synchronized. However, the synchronization is not guaranteed.
- Live video and audio are not synchronized.
- Audio is recorded at 8 KB/s. The communication volume is 64 kbps.
- After [**Audio recording**] is enabled, related indications are changed to show that, such as [**Record + Sensor (Audio)**], in the [**Configuration and Preferences**] screen > [**Camera Summery**] tab (→ P. 4-8), and the [**Configuration and Preferences**] screen > the [**Recording Schedules**] tab (P. 4-27).
- The timeline on the [**Viewer**] screen (→ P. 5-48) does not show whether audio recording is enabled or not.
- [**Audio recording**] via a proxy server is not supported.

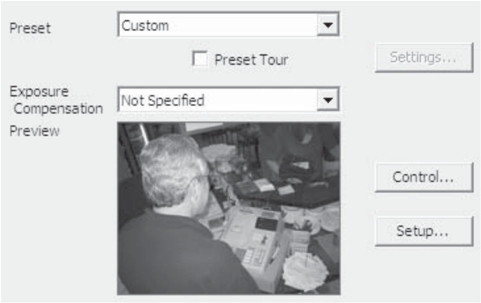
Set the Preset Camera Angle and Exposure Compensation

1. **In the [Preview] field a live preview is given of the selected camera view when connected.**

   Select a camera position from [**Preset**] drop-down menu of available camera angles, to retain a live preview from that angle.

   The VB-C500D is not supported, so the Preset item will be grayed out.

   Alternatively, move your mouse pointer in the [**Preview**] area to display controls and clicking to pan, tilt and zoom (→ P. 4-22).



Preset: Custom

Exposure Compensation: Not Specified

2. **Check [Preset Tour] to move among multiple preset positions sequentially (VB-C60, VB-C300, VB-C50i/VB-C50iR only). Click [Settings] to specify the order to switch among presets.**

   See P. 4-58 for how to set the Preset Tour.

3. **Select [On] or [Off] from the [Exposure Compensation] drop-down menu (You can set the exposure compensation to [High], [Medium], [Low] or [Off] for VB-C300, VB-C50i/VB-C50iR, VB-C50FSi and VB-C50Fi. On VB-C500D and VB-C60, the options include: 0, +1, +2, +3, -3, -2, -1).**

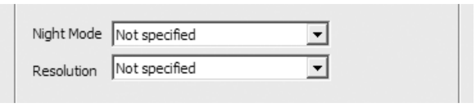
   Select [**Not Specified**] to accept the currently configured Camera Server exposure settings.

Note

- Camera angle can be changed by moving your mouse pointer in the [**Preview**] area to display controls. By clicking, pan, tilt and zoom function can be controlled (→ P. 4-22).
- After the camera server control finishes, the [**Preset**] is set to [**Custom**], and the current setting values of exposure compensation and the camera server position are used for recording.
- If you select [**Not Specified**] for [**Preset**], Storage Server records video the Camera Server currently displays. However if camera angle is changed from the Viewer, the video will be recorded at the changed position of the Camera Server.
- In the following cases, the Storage Server records what the Camera Server currently displays;
  - Multiple number of cameras are connected to VB150 with the [**Video Input**] set to [**Single**].
  - VB-C50i/VB-C50iR, VB-C50FSi, VB-C50Fi with an external camera connected and have configured the [**Use External Video Input**].
- During initializing the camera head position of VB-C50i/VB-C50iR, VB-C300 or VB-C60, the camera head moves to face front, and then moves back to the current position. Please note that video will be recorded in the meantime cotinuously.
- The [**On Motion Detection**], [**Exposure compensation**], and additional options are not available, if you use the [**Preset Tour**] function.
- If you use the [**Camera Control**] Panel to do the pan, tilt, or zoom operation, the value in the [**Preset**] drop-down menu will changed to [**Custom**].
- Preset used for the [**Preset Tour**] are created on the Camera Server. Please see the Camera Server User's Manual for details on making camera presets.
- Although the VB-C300 does not allow [**Preset Tour**] on the Camera Server, the [**Preset Tour**] is available via this setting.
- If [**Preset Tour**] is selected, [**Exposure Compensation**] is not available.
- If [**Exposure**] is selected, the [**Exposure Compensation**] option is set to [**Not Specified**].
- With VB-C60, when the optical zoom exceeds the threshold and shifted to digital zoom, [**Custom**] in the [**Preset**] pull-down menu is not available. Even if you click [**OK**] in the [**Add Schedule Item**] and [**Edit Schedule Item**] dialog or the [**Sensor Event Settings**] dialog, an error message will appear and the settings will not be applied.
- Preset Tour settings cannot be made with the VB-C500D, VB-C50FSi, and VB-C50Fi.

Set the Night Mode and Resolution (VB-C500D, VB-C60, VB-C300, VB-C50i/VB-C50iR, VB-C50FSi, VB-C50Fi and VB150)

1. Select the [Night Mode] from the drop-down menu. You can select from [Not specified], [Disabled], [Enable], and [Auto].



Night Mode: Not specified

Resolution: Not specified

Note

- If you select [**Enabled**], the [**Night Mode**] status will be back to [**Disabled**] after the configured recording schedule finishes.
- A higher resolution results in larger disk usage. Make sure you have enough disk space.
- If you set [**Night Mode**] to [**Auto**], please make sure that [**Exposure**] mode is set to [**Auto**] on the [**Camera Control**] Panel.
- The Auto setting for Night Mode can only be set with the VB-C500D, VB-C60, and VB-C300.
- The [**Night Mode**], [**Day Mode**], and [**Not specified**] options for the Night Mode function can only be set with VB-C500D, VB-C60, VB-C300, VB-C50i series, and VB150.
- Video turns to monochrome in the [**Night Mode**].
- If you specify [**Auto**], you cannot control the [**Night Mode**] using the [**Camera Control**] Panel.
- You cannot use the built-in infrared lamp if you are using the optional dome housing.

Tip

- In the [**Night Mode**], set to [**Enable**]. After the schedule expires, the [**Night Mode**] will be disabled.
- In the [**Auto**] mode, the mode automatically switches according to the brightness.

2. **Select a [Resolution] for recording from the drop-down menu. You can select from [JPEG Small], [JPEG Medium], [JPEG Large], [MPEG-4] or [Not specified].**

   If you select [**Not specified**], the Storage Server does not attempt to change the setting, rather it accepts whatever [**Night Mode**] setting and resolution the Camera Server offers.

Note

[**MPEG-4**] can be selected for VB-C500D/VB-C60.

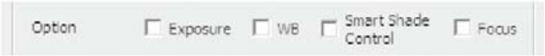
Tip

The actual image size in relation to the specified resolution size is as follows.

JPEG Small	160 x 120
JPEG Medium	320 x 240
JPEG Large	640 x 240 (VB150 only) 640 x 480
MPEG-4	the size specified in the setting page (VB-C500D/VB-C60)
Not specified	the size that has been specified in the setting page at the time of starting recording (VB-C500D/VB-C60) the size specified in the setting page

Set Additional Options

To enable the [**Exposure**], [**WB**] (White Balance), [**Smart Shade Control (SSC)**], and/or [**Focus**] on the [**Camera Control**] Panel, check the each check box.

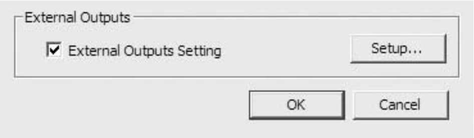


Note

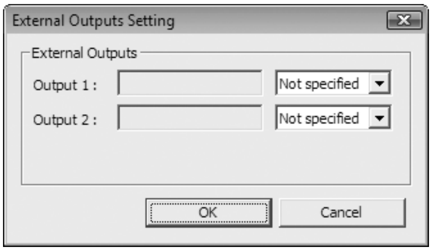
- The additonal option is available with VB-C500D/VB-C60/VB-C300. [**Smart Shade Control**] is available with VB-C500D and VB-C60. Additionally, Focus is not available for the VB-C500D.
- If the [**Exposure**] box is selected, the [**Exposure Compensation**] option will be disabled.
- If [**Preset Tour**] is enabled, you cannot use additional options.
- The additional option settings will be return to the original settings if the Camera Server settings are changed during schedule execution.

Set External Device Output

1. Click [External Outputs Setting] to control any external devices that may be connected to your Camera Server.


External Outputs
☑ External Outputs Setting
Setup...
OK
Cancel

2. Click [Setup] to change the details of external outputs. If you do not change the settings, the defaults will be used.
3. If [Setup] is clicked, click the drop-down menu for the target external device and set [External Outputs] to [On] or [Not specified] on the [External Outputs Setting] dialog.


External Outputs Setting
External Outputs
Output 1 :
Not specified
Output 2 :
Not specified
OK
Cancel

> **Tip**
>
> For VB-C300, only one target external device can be configured on the [**External Outputs Settings**] dialog.

Finish Setting

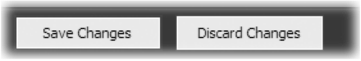
Click [**OK**] to save the new settings and close the dialog.

Click [**Cancel**] to discard the new settings.

When you click [**OK**], the [**Preset**] and [**Exposure Compensation**] settings are effective on Video Windows in the Viewer. Control the camera as required by clicking [**Camera Control**].

Save Schedules

1. To save the Normal Schedule, click [Save Schedule] at the bottom right-hand corner of the [Normal Schedule] window.



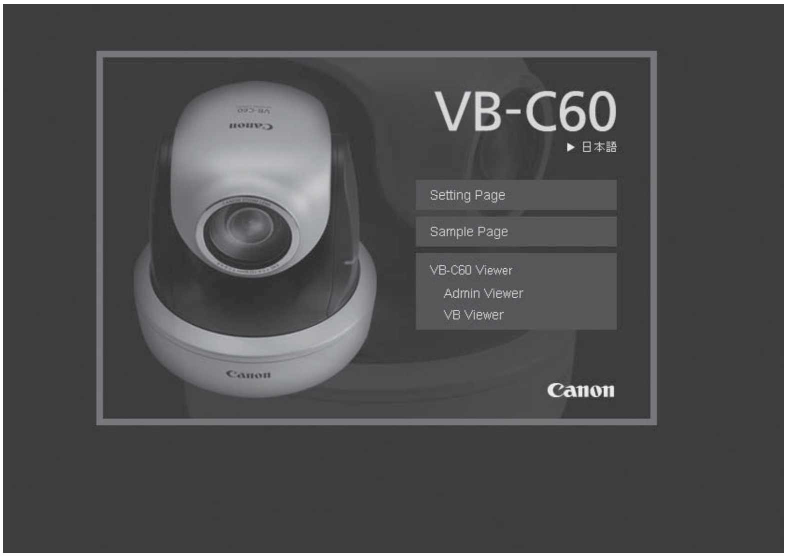
Click [**Discard Changes**] to cancel any modifications you have made.

2. If you wish to return to the Viewer, select [Viewer Screen] from the [View] menu bar.

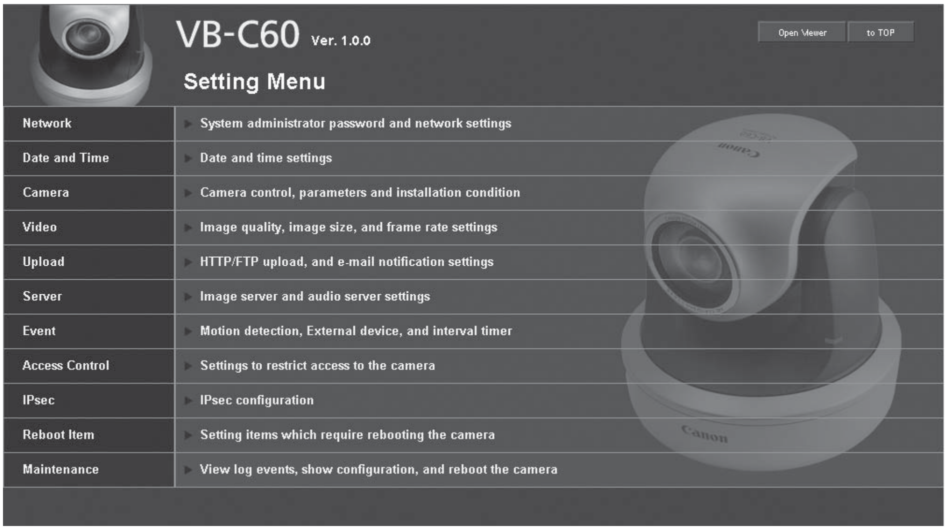
> **Note**
>
> Camera Servers have feature to record videos on memory of the camera with sensor input or schedule. If settings are enabled on the Camera Server, they take precedence over any settings made in VK-64/VK-16. This may cause some confusion if your VK-64/VK-16 recording schedules fail to record with the correct camera preset. You should disable such Camera Server features if you wish VK-64/VK-16 settings to take precedence.

Change Camera Server Settings

Click [**Set-up**] in the [**Add Schedule Item**] and [**Edit Schedule Item**] dialog, and then Camera Server's top page appears after Internet Explorer launches (VB-C60).


VB-C60
▶ 日本語
Setting Page
Sample Page
VB-C60 Viewer
Admin Viewer
VB Viewer
Canon

Click [**Setting Page**] to display the Setting Page to change Camera Server settings.


VB-C60 Ver. 1.0.0
Open Viewer
to TOP

Setting Menu

Network	▶ System administrator password and network settings
Date and Time	▶ Date and time settings
Camera	▶ Camera control, parameters and installation condition
Video	▶ Image quality, image size, and frame rate settings
Upload	▶ HTTP/FTP upload, and e-mail notification settings
Server	▶ Image server and audio server settings
Event	▶ Motion detection, External device, and interval timer
Access Control	▶ Settings to restrict access to the camera
IPsec	▶ IPsec configuration
Reboot Item	▶ Setting items which require rebooting the camera
Maintenance	▶ View log events, show configuration, and reboot the camera

Items related to recording schedule setting are as follows. See the Camera Server's manual for details.

User Name and Password

- Set the user name and password for the Camera Server. You cannot set them with VK-64/VK-16.

Motion detection recording

- If the Camera Server is VB-C500D, VB-C60, VB-C50i/VB-C50iR, VB-C50FSi, VB-C50Fi, or VB150, you can configure the Motion Detection settings on the Camera Server.
- To configure the Motion Detection settings on VB-C500D, VB-C60, VB-C50i/VB-C50iR, VB-C50FSi, VB-C50Fi, or VB150, use the VB Administration Tools supplied with the Camera Server.
- For VB150 ([**Video Input**] should be set to [**Single**]), the Motion Detection settings are configured using the VK-64/VK-16 [**Motion Detection Settings**] dialog (→ P. 4-47).
- The Motion Detection function is not suitable for conditions where high reliability is required. It is not recommend using this function in situations where high reliability is required, such as for monitoring purposes. Canon accepts no liability whatsoever for faults, etc. resulting from the use of the Motion Detection.

Image/Video Quality

- You can set the image/video quality. The Motion Detection settings may be affected by the video quality setting of the Camera Server. When changing the video quality on the Camera Server, be sure to check the settings for Motion Detection.

Camera Name

- Set the name of the camera displayed in the [**Camera Server**] list. You cannot set them with VK-64/VK-16.

Preset

- Presets should be set on the Camera Server in advance. You cannot set them with VK-64/VK-16.
- If the recording settings using a preset are used on the Camera Server, the preset position will override camera positions set by VK-64/VK-16, including those in recording schedules and Camera Server position. The camera control will be lost when starting to control the camera at the Camera Server.
- If predefined presets are not shown in the [**Preset**] drop-down menu even though they have been defined on the Camera Server, click [**Get Camera Control**] to display the [**Camera Control**] Panel, obtain camera control, then configure the settings again.

Restrict Service Time

- If a Camera Server has been configured with [**Restrict Service Time**] enabled, VK-64/VK-16 will be able to record from the Camera Server during restricted times.

External Device

- Specify the name of the external device, such as sensor name. You cannot configure it with VK-64/VK-16.
- If the external device is not set on the Camera Server, VK-64/VK-16 cannot configure it.

Sensor Input, Recording to Camera Memory

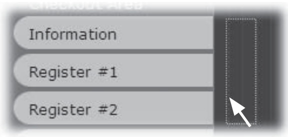
- Camera Servers have certain features to capture image into its memory based on sensor input or schedule. If settings are enabled on the Camera Server, those settings take precedence.

Batch-Setting Schedules

When you set schedule, you can set multiple schedules at one time.

Create Multiple Camera Schedules

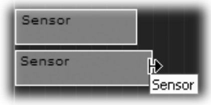
You can click and drag schedule area covering several cameras to bring up the [Add Schedule Item - multiple cameras] dialog. This allows you to easily set recording schedules for multiple cameras. Once created, settings for each camera can be customized.

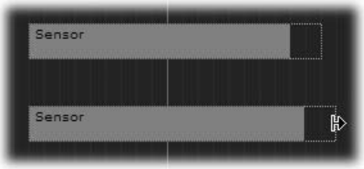


Example : Drag over the Schedule area covering three Camera Servers to set the same schedule for the three Camera Servers.

Change or Move Multiple Camera Server Schedules

While holding down the [Ctrl] key, click on individual schedule items to select them, and then drag the mouse to change or move multiple recording schedules.





Set Continuous Recording

You can set Continuous Recording with the frame rate of 0.1 to 30 frames per second when creating a Normal Schedule or Special Day Schedule (The upper limit is 5 fps with VK-Lite).

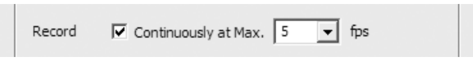
Specify the number of still images to record every second from the [fps] drop-down menu.

Higher [fps] value generates smooth video, however, the load on the Storage Server or network goes higher. Video data quantity also increases to consume hard disk space.

To configure the Camera Server for recording:

Set Recording Mode

1. **Check the [Continuously at Max.] check box if you want to set continuous recording for the time period.**



Record ☑ Continuously at Max. 5 fps

2. **Select a frame rate for recorded video from the drop-down menu, or input a value from the keyboard.**

   You can set the frame rate from 0.1 to 30 frames per second. The default setting is 5 seconds.

Note

- When the load on Storage Server CPU and hard disk is higher, recording at the specified frame rate may not be available, or the video recording may be interrupted.
- Higher frame rates for result in larger disk usage. Please ensure that you have enough disk space.
- The specified frame rate is the frame rate that the Storage Server will attempt to record, however may not be the actual frame rate used for recording video. Factors such as the number of Viewers, load on the Camera Server and the Storage Server, and network traffic may reduce the actual frame rate recorded. Also, the maximum frame rate for a VB-C10 configured with a resolution of 640 x 480 is 10 frames per second, and for a VB150 with 4 cameras is 2 to 3 frames per second.
- While the [Resolution] is set to [MPEG-4], the frame rate drop-down menu is gray out. However, the video is recorded at the frame rate specified in VB-C500D or VB-C60 setting page at that point.

Set Motion Detection Recording VK-64/16

Set Motion Detection Recording Settings

The Motion Detection recording starts when a motion has been detected.

Configure the Motion Detection recording settings in the [**Motion Detection Settings**] window which appears when you click [**Settings**].

Some items in the [**Motion Detection Settings**] window overlap with the items in the [**Add Schedule Item**] and [**Edit Schedule Item**] dialog. In Motion Detection recording, the settings in the [**Motion Detection Settings**] window take precedence. [**Preset**] and [**Exposure Compensation**] settings in the [**Add Schedule Item**] and [**Edit Schedule Item**] dialog are applied to the Motion Detection recording.

Note

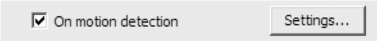
- The Motion Detection function is not suitable for conditions where high reliability is required. It is not recommend using this function in situations where high reliability is required, such as for monitoring purposes. Canon accepts no liability whatsoever for faults, etc. resulting from the use of the Motion Detection.
- Motion detection is performed by the Storage Server or Camera Server (whichever selected in the [**Motion Detection Settings**] window). If the Camera Server executes motion detection, motion detection is not available while the Camera Server is performing the pan, tilt, or zoom operation (motion detection by the Storage Server is available during these operations).
- If the recording schedule expires during Motion Detection recording, the Motion Detection recording also terminates.

Edit Motion Detection Recording Settings

You can specify the detection area and the amount of sensitivity for Motion Detection Recording. The area for detection can also be modified which is ideal, for example, if the field of view has two entrances and you wish to monitor motion for one entrance.

Step 1: Click [Settings] next to [On Motion Detection]

The [**Motion Detection Settings**] dialog appears (The dialog for VB-C60 is shown below).

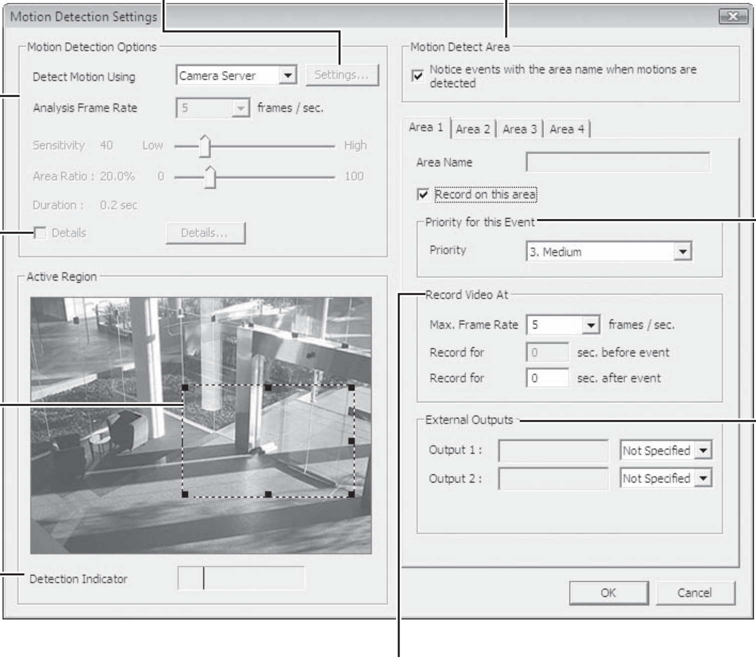


☑ On motion detection

Click to activate Motion Detection on the Camera Server for VB-C500D, VB-C60, VB-C50i/VB-C50iR, VB-C50FSi and VB-C50Fi.

Allow to divide the detection area into 4 and to set for recording for each divided detection area.

Set a priority for events triggered by motion.



Motion Detection Settings

Motion Detection Options

Detect Motion Using: Camera Server

Analysis Frame Rate: 5 frames / sec.

Sensitivity: 40

Area Ratio : 20.0%

Duration : 0.2 sec

☐ Details

Motion Detect Area

☑ Notice events with the area name when motions are detected

☑ Record on this area

Priority for this Event

Priority: 3. Medium

Record Video At

Max. Frame Rate: 5 frames / sec.

Record for 0 sec. before event

Record for 0 sec. after event

External Outputs

Output 1 : Not Specified

Output 2 : Not Specified

Select sensitivity options.

Detail settings are available for the [**Sensitivity**], [**Area Ratio**], and [**Duration**].

Click and drag a control point to re-size the active region.

Motion detection level indicator will increase during activity.

Select frame rate and pre/post event duration for recording triggered by motion.

Activate external device output.

Note

- This dialog box is only valid when connected to VB-C60, [**Detect Motion Using**] is set to [**Camera Server**] and [**Notice events with the area name when motions are detected**] is selected. On VB-C500D and VB-C60, recording settings can be configured separately on each of the four detection areas (tabs).
  If [**Detect Motion Using**] is set to [**Storage Server**], or you are connected to a different camera, or [**Notice events with the area name when motions are detected**] is not checked, the video recording settings apply to the entire region.
- If the [**On sensor event**] is also enabled and motion detection and sensor input occur simultaneously, the [**On sensor event**] takes precedence. See "Priorities of Motion Detection and Sensor Event Recordings" (→ P. 4-57) for details.
- You cannot use the [**Preset Tour**] and the Motion Detection recording together.

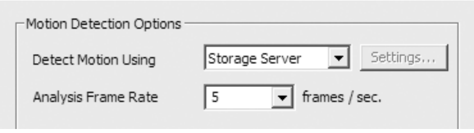
Step 2: Set Motion Detection Options

Set the following options on the [**Motion Detection Settings**] dialog.

1. In the [Detect Motion Using] menu, select one of the following:

   [Storage Server]
   Obtains video from the Camera Server and detects motion with the Storage Server.

   [Camera Server]
   Uses the Motion Detection function of the Camera Server to detect motion (This menu is only active for VB150 servers with the [**Video Input**] set to [**Single**] or VB-C500D, VB-C60, VB-C50i/VB-C50iR, VB-C50FSi, VB-C50Fi).



Detect Motion Using: Storage Server
Analysis Frame Rate: 5 frames / sec.

2. In the [Analysis Frame Rate] menu, select from 0.1 to 30 frames per second.

If you select the [**Camera Sever**] to detect motion, [**Settings**] becomes available. [**Settings**] is now enabled. Click to launch your VB Admin Motion Detection Setting Tool. Install the VB Admin Tools that is bundled with the VB-C500D, VB-C60, VB-C50i/VB-C50iR, VB-C50FSi, and VB-C50Fi in advance. See the Camera Server's User's Manual for how to configure the motion detection settings.

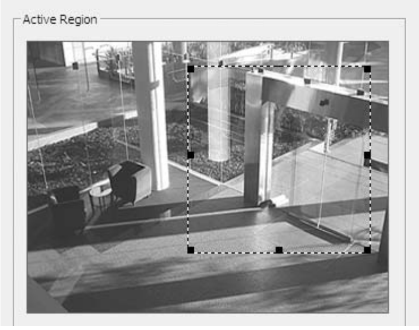
Note

- To use the Motion Detection function of the VB-C50i/VB-C50iR, VB-C50FSi and VB-C50Fi, it is necessary to configure schedules from the **VB Admin Schedule Setting Tool**.
- Setting motion detection at the Storage Server causes high CPU load. It is strongly recommended to set motion detection at the Camera Server whenever it has the motion detection function.
- [**Detect Motion Using**] cannot be set to [**Storage Server**] when the [**Resolution**] is set to [**MPEG-4**].

Step 3: Set the active region for recording

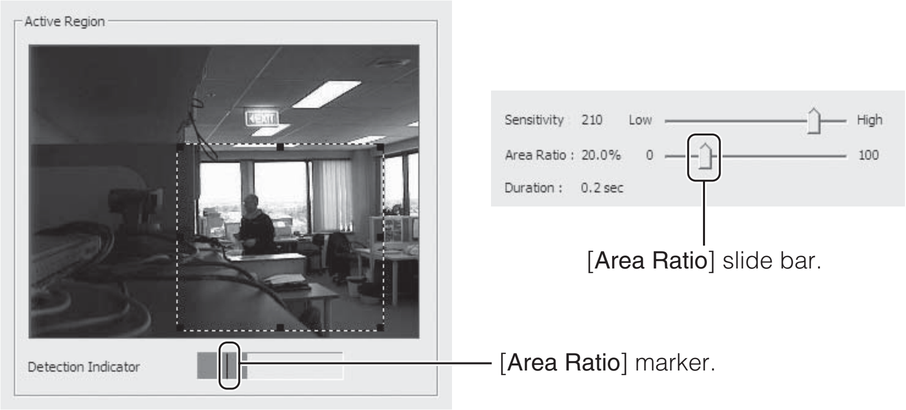
In the [**Active Region**] field, adjust the region where motion detection is triggered. By default, the [**Active Region**] is the full area. In addition you cannot use pan, tilt, and zoom operations in this window.

1. Click one of the corner or edge handles and hold down the mouse button.
2. Drag the handle to change the motion-trigger boundary (dotted frame).



The [**Motion Detection Options**] field also allows you to set the sensitivity for Motion Detection within the [**Active Region**]. [**Sensitivity**] and [**Area Ratio**] are selected by using the two sliding bars.

Motion detection status can be confirmed by the [**Detection Indicator**] during operation.



Sensitivity : 210
Area Ratio : 20.0%
Duration : 0.2 sec

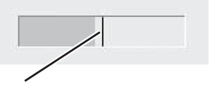
[**Area Ratio**] slide bar.

[**Area Ratio**] marker.

[Detection Indicator] Colors

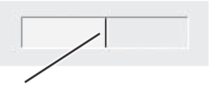
Motion is displayed in the [**Detection Indicator**] as a green color bar and will remain green if the level of motion is below the configured [**Sensitivity**] and within a defined [**Area Ratio**]. If motion reaches the set [**Sensitivity**] and [**Area Ratio**], the color bar changes to yellow and if the detected motion remains at the yellow level for the specified duration period, a red color bar is displayed and an event is triggered. The behavior of the [**Detection Indicator**] is described as follows.

- Green color bar - Changed area is less than the specified [**Area Ratio**], i.e., activity remains at the left of the [**Area Ratio**] marker.

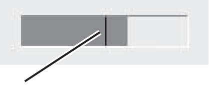


[**Area Ratio**] marker.

- Yellow color bar - Changed area is equal to or greater than the specified [**Area Ratio**] (activity peaks on or to the right of the Area Ratio Marker) but the required cotinuance of motion has not met the specified duration in order to trigger an event.


[**Area Ratio**] marker.

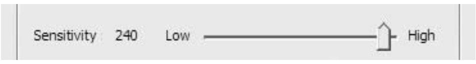
- Red color bar - The amount of change that meets the defined detection conditions and motion is detected, triggering an event, i.e., the required amount of motion has been detected for the specified duration.


[**Area Ratio**] marker.

Set the [Sensitivity]

[**Sensitivity**] is the degree of change which is detected as motion.

Drag the slide bar to adjust [**Sensitivity**] to the required value. Can be specified in increments of 10 from 1 to 250.


Sensitivity 240 Low High

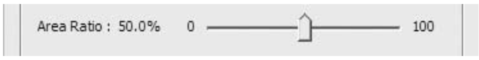
Tip

The sensitivity can be set to [**Low - Med**] or [**Med - High**]. To set, check the [**Detail Settings**] checkbox and click the [**Settings**] button. When the [**Detail Settings**] dialog box is displayed, click [**Low - Med**] to set the sensitivity in the range of 1 to 128, or [**Med - High**] to set in the range of 129 to 256.

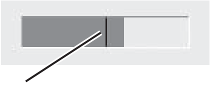
Set the [Area Ratio]

[**Area Ratio**] is the degree of change of area (ratio against the defined detection area) detected as motion.

Click and drag the [**Area Ratio**] slide bar to any position from 0% to 100%. This establishes the proportion of image inside the Active Region (dotted frame) allowed before motion is detected.


Area Ratio : 50.0% 0 100

When you drag the slide bar, the black vertical line in the Detection Indicator will move to reflect the change in specified [**Area Ratio**].

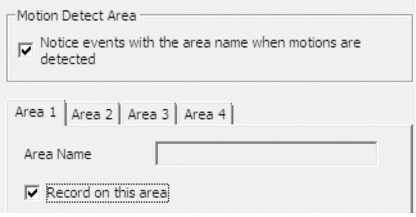

[**Area Ratio**] marker.

Tip

Although the duration for recognizing motion is fixed at 0.2 seconds, this can also be changed if neccesary. To change this setting, select the [**Detail Settings**] checkbox and click the [**Settings**] button. The [**Detail Settings**] dialog box is displayed, and the value can be change in the range of 0.0 to 5.0 seconds.

Step 4: Set the Detection Regions (VB-C500D/VB-C60)

1. If you want to partition the detection region for notifications, check area the [Notice events with the area name when motions are detected] checkbox.
2. Check the [Record on this area] checkbox on the recording settings tab.


Motion Detect Area

☑ Notice events with the area name when motions are detected

Area Name

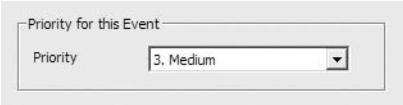
☑ Record on this area

Tip

This operation is not necessary if you want configure the recording settings over the entire region without partitioning the detection regions.

Step 5: Set the event priority status

In the [**Priority**] field, select the priority for the event to be generated for this motion from a menu of five options, ranging from [**1. Highest**] to [**5. Lowest**]. Priorities are color-coded in the Timeline in the Viewing Screen.


Priority for this Event

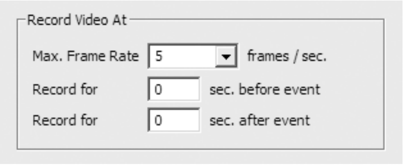
Priority: 3. Medium

Tip

When the same priority level is set to multiple detection areas, the schedule is executed in the order of Area 1, 2, 3 and 4.

Step 6: Set frame rate and pre and post event recording duration

1. [Max. Frame Rate] - select a maximum frame rate for recorded video from the drop-down menu. Choose from 0.1 frames per second to 30 frames per second (5 is the default).



Record Video At

Max. Frame Rate 5 frames / sec.

Record for 0 sec. before event

Record for 0 sec. after event

2. [Record for] [sec. before event] - enter a number of seconds for the amount of recording time before the event occurs (up to 30 seconds).

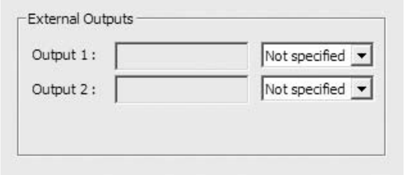
Note

- If [**Continuous**] is also selected, Record for before event is not available.
- If Record for before event is set, it will take approximately 10 seconds after event occurrence until its display in the viewer.
- If the resolution is set to MPEG-4, the frame rate set in the VB-C500D or VB-C60 becomes enabled.

3. [Record for] [sec. after event] - enter a number of seconds for the amount of recording time after the event occurs (up to 999 seconds).

Step 7: Set the [External Outputs]

Click the drop-down menu for the target external device and set [**On**] or [**Not specified**].



External Outputs

Output 1 : Not specified

Output 2 : Not specified

Note

Available external outputs depend on the Camera Server.

Click [**OK**] to save the new settings and close the dialog.

Click [**Cancel**] to discard the new settings.

Note

Even with 0 seconds set to [**Recorded for __ sec. before event**] and [**Recorded for __ sec. after event**] fields, video is still recorded while motion is being detected.

Tip

See Chapter 6 for optimizing the Motion Detection operation.

Set Sensor Event Recording Settings

The Sensor Event recording starts when a sensor input has occurred.

Configure the Sensor Event recording settings in the [**Sensor Event Settings**] window which appears when you click [**Settings**].

Some items in the [**Sensor Event Settings**] window overlap with the items in the [**Add Schedule Item**] and [**Edit Schedule Ite**m] dialog. When the Sensor Event recording is executed, the settings in the [**Sensor Event Settings**] window take precedence.

Note

If the recording schedule expires during Sensor Event recording, the Sensor Event recording also terminates.

Tip

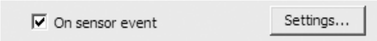
If using a VB150 with multiple cameras and [**Video Input**] is specified, you can configure different Sensor Event recording settings for each camera (or you can specify [**Do not record**]).

Edit Sensor Event Recording Settings

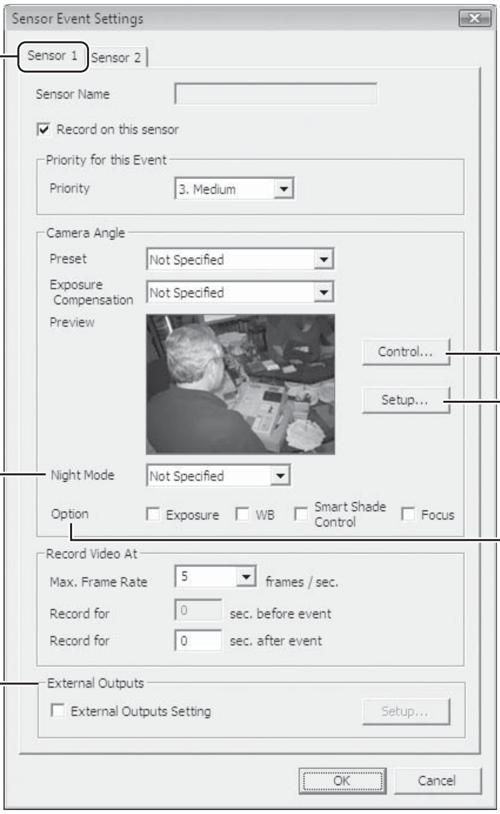
You can specify recording settings based on the occurrence of a sensor event. A number of tabs in the [**Sensor Event Settings**] dialog are shown to reflect the number of sensors on each camera. You can modify the recording settings for each sensor.

Step 1: Click [Settings] next to [On sensor event]

The [**Sensor Event Settings**] dialog appears.



☑ On sensor event



Sensor Name

☑ Record on this sensor

Priority: 3. Medium

Preset: Not Specified

Exposure Compensation: Not Specified

Night Mode: Not Specified

Option: ☐ Exposure ☐ WB ☐ Smart Shade Control ☐ Focus

Max. Frame Rate: 5 frames / sec.

Record for 0 sec. before event

Record for 0 sec. after event

☐ External Outputs Setting

Click a tab to modify that sensor`s settings. The sensor name displayed is the name set by the Camera Server.

Night Mode is available for VB-C500D, VB-C60, VB-C300, VB-C50i/VB-C50iR, VB-C50FSi and VB-C50Fi Camera Servers or VC-C50i/VC-C50iR cameras connected to Camera Server VB150s. Click Night mode and select [**Disabled**], [**Enabled**], [**IR light off or Enabled**], [**IR light on**] from the sub-menu.

You can set [**External Outputs**] to [**On**] or [**Not specified**] when a sensor event occurs.

Control the camera via the [**Camera Control**] Panel. See the Viewer Manual for the information about the Camera Control Panel.

The Top page of the Camera Server is displayed after Internet Explorer launches.

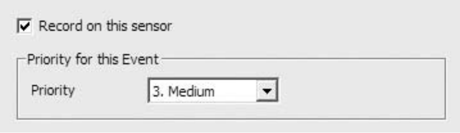
Set whether or not to use additional options (Exposure, White Balance, Smart Shade Control, and Focus).

Note

- Frequent sensor events result in high CPU load on the Storage Server. If you have 10 or more sensor events per minute continuously, it is recommended that you should set continuous recording.
- If setting [**Night Mode**] on VB-C50iR, IR cut filter will be inactive. It will not turn on the built-in IR light. To turn on the IR light, perform the operation from the Video Window menu.

Step 2: Enable recording and set an event priority

1. Check [Record on this sensor] to enable recording when a sensor is triggered.
2. In the [Priority] field, select the priority for the event to be generated for this motion from 5 options, ranging from [1. Highest] to [5. Lowest]. Priorities are color-coded as events in the Timeline in the Viewing Screen.

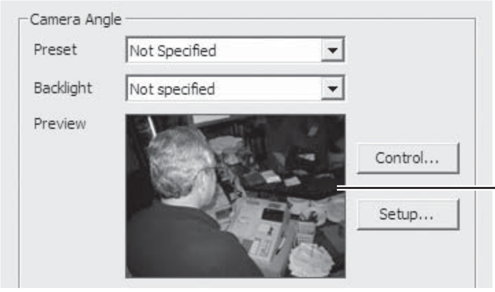


☑ Record on this sensor

Priority for this Event

Priority: 3. Medium

Step 3: Specify a camera angle when the sensor is triggered



Camera Angle

Preset: Not Specified

Backlight: Not specified

In [**Camera Angle**], select a preset camera angle from the [**Preset**] drop-down menu. When the sensor is triggered, the camera will be moved to this position.
If you select [**Not specified**], the camera will not be moved.

The camera angle can also be changed by moving your mouse pointer in the [**Preview**] area to display controls and clicking to pan, tilt and zoom (→ P. 4-22). After the camera has been controlled, the [**Preset**] will be set to [**Custom**].

Note

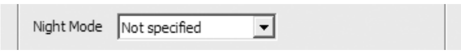
- If you set the viewing angle to the preset position of VB-C300 in the digital zoom region, the actual angle may be misaligned from the set angle.
- Camera Servers have functions to record video on memory of the camera by the sensor input or schedule. If the settings are enabled on the Camera Server, they take precedence.

Tip

- Click the [**Exposure Compensation**] drop-down menu and select [**On**] to compensate for camera views with strong backlighting. The setting will be used when the sensor is triggered. This is useful, for example, if a camera angle would change from an indoor view to an outdoor view when the sensor is triggered.
- If you set the [**Preset**] option in the [**Sensor Event Settings**] window, the pre-event recording position may be different from the specified position because the Camera Server moves when a sensor input occurs. Also, if you specify the post-event recording time to "0", and the sensor input occurs for a short period of time, recording may terminate before the Camera Server reaches the preset position.
- If you are using a normal close type sensor, you need to set the presets with the Camera Server recording screen. See "Configure External Device Input" (→ P. 4-21) for the details.

Step 4: Set the Night Mode (VB-C500D, VB-C60, VB-C300, VB-C50i/VB-C50iR, VB-C50FSi, and VB-C50Fi)

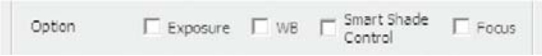
Select the [**Night Mode**] from the drop-down menu. You can select from [**Disabled**], [**Enabled**], or [**Not specified**].



Night Mode: Not specified

Step 5: Set Additional Options (VB-C500D, VB-C60, VB-C300)

To use the Exposure, White Balance, Shade Control, and/or Focus settings on the [**Camera Control**] Panel, check the corresponding check box.



Option ☐ Exposure ☐ WB ☐ Smart Shade Control ☐ Focus

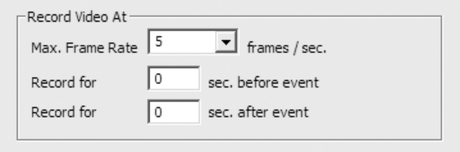
Note

- The additonal options are available with VB-C500D/VB-C60/VB-C300. [**Smart Shade Control**] is available with the VB-C500D/VB-C60. Additionally, Focus is not available for the VB-C500D.
- If [**Exposure**] is selected, the [**Exposure Compensation**] option is set to [**Not Specified**].

Step 6: Set frame rate and pre and post event recording duration

In the [**Record Video At**] field:

1. [Max. Frame Rate] - select a maximum frame rate for recorded video from the drop-down menu, or enter a value from the keyboard. Choose from 0.1 to 30 frames per second (5 is the default).



Record Video At
Max. Frame Rate 5 frames / sec.
Record for 0 sec. before event
Record for 0 sec. after event

Note

- The frame rate specified is the frame rate that the Storage Server will attempt to record, and may not be the actual frame rate used for recording video. Factors such as the number of Viewers, the number of Camera Servers used, network traffic and load on the Camera Server and the Storage Server may reduce the actual frame rate recorded.
- While the [**Resolution**] is set to [**MPEG-4**], the frame rate drop-down menu is gray out. However, the video is recorded at the frame rate specified in the VB-C500D/VB-C60 setting page at that point.

2. [Record for __ sec. before event] - enter a number of seconds for the amount of recording time before the event occurs (up to a maximum of 30 seconds).

Note

- If [**Continuous Recording**] is also set, [**Record for __ sec. before event**] is not available.
- If [**Record for __ sec. before event**] is selected, it will take approximately 10 seconds after event occurrence until its display in the viewer.

3. [Record for __ sec. after event] - enter a number of seconds for the amount of recording time after the event has transpired (up to a maximum of 999 seconds).

Click [OK] to save the new settings and close the dialog.

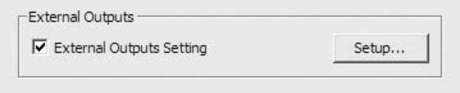
Click [Cancel] to discard the new settings.

Note

- If the [**Record for __ sec. before event**] or [**Record for __ sec. after event**] event fields are set to 0 seconds, video will still be recorded while the sensor is activated.
- Longer pre-event recording will increase memory usage. Longer pre-event recording with insufficient memory may greatly reduce performance when the disk-based virtual memory runs short.

Step 7: Set the External Outputs

1. Click [External Outputs Setting] to control any external devices that may be connected to your Camera Server.

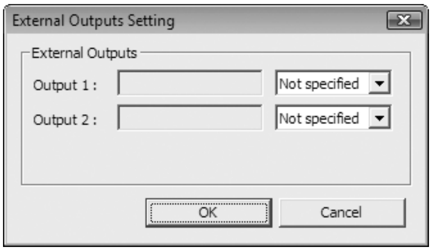


External Outputs

☑ External Outputs Setting

2. Click [Setup] to change the details of external outputs. Otherwise the default settings will be applied.

3. If [Setup] is clicked, click the drop-down menu for the target external device and set [External Outputs] to [On] or [Not specified] on the [Control External Devices] dialog.



External Outputs Setting

External Outputs

Output 1 : Not specified

Output 2 : Not specified

Note

Available external outputs depend on the Camera Server.

Priorities of Motion Detection and Sensor Event Recordings

You can specify events priorities for the Motion Detection and Sensor Event recordings, and if the events occur simultaneously, the recording with the higher priority is performed first.

When using the Motion Detection and Sensor Event recordings together and motion detection and sensor input occur simultaneously, the Sensor Event recording takes precedence.

If two events with the same priority occur, the earlier event takes precedence. When the earlier event terminates and the later event still remains, the later event will be handled.

Set Preset Tour

Use the Preset Tour function to move among multiple preset positions sequentially.

In the [**Add Schedule Item**] and [**Edit Schedule Item**] dialog, there are two options available for setting the Preset Tour function. Procedure to set the Preset Tour function in as follows.

Note

- When Preset Tour and MPEG-4 are used together, the video data size becomes very large.
- The durability of camera Pan/Tilt mechanism may be affected depending on the Preset Tour setting (→ P. 4-61).
- In the Preset Tour, the camera position returns to the first preset after the last preset.
- When the Preset Tour is used, the Motion Detection recording, Exposure compensation, and additional options are not available.
- Presets used for Preset Tour are created on the Camera Server. Please see the Camera Server's User's Manual for details on creating camera presets.
- Preset Tour can be used with VB-C60, VB-C300, VB-C50i, and VB-C50iR only.

Set Preset Tour

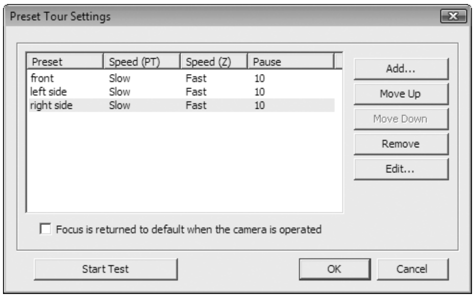
Add a Preset

1. Check the [Preset Tour] box and click [Settings].

   The [**Preset Tour Settings**] dialog appears.

2. Click [Add].

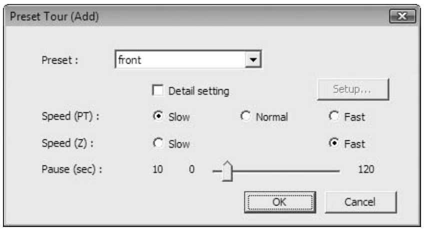
   The [**Preset Tour (Add)**] dialog appears.



Preset	Speed (PT)	Speed (Z)	Pause
front	Slow	Fast	10
left side	Slow	Fast	10
right side	Slow	Fast	10

☐ Focus is returned to default when the camera is operated

3. Select a preset to add from the [Preset] drop-down menu.



Preset : front

☐ Detail setting

Speed (PT) : ● Slow ○ Normal ○ Fast

Speed (Z) : ○ Slow ● Fast

Pause (sec) : 10 0 120

4. For the selected preset, configure the [Speed (PT)], [Speed (Z)], and [Pause (sec)] settings.
5. Check the settings and click [OK].

   This returns to the [**Preset Tour Settings**] dialog.

Test the Preset Tour

1. Check the [Preset Tour] box and click [Settings].

   The [**Preset Tour Settings**] dialog appears.
2. Click [Start Test].

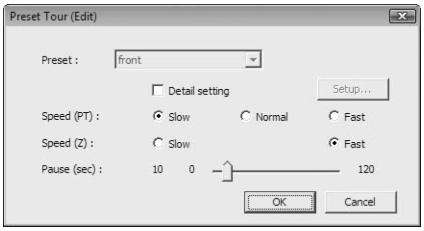
   After clicking [**Start Test**], the Preset Tour is executed once and you can confirm the operation.

Change the Preset Settings

1. Check the [Preset Tour] box and click [Settings].

   The [**Preset Tour Settings**] dialog appears.
2. Select a preset to change from the list and click [Edit].

   The [**Preset Tour (Edit)**] dialog appears.



Preset : front

☐ Detail setting

Speed (PT) : ● Slow ○ Normal ○ Fast

Speed (Z) : ○ Slow ● Fast

Pause (sec) : 10 0 120

3. For the selected preset, change the [Speed (PT)], [Speed (Z)], or [Pause (sec)] settings.
4. Check the settings and click [OK].

   This returns to the [**Preset Tour Settings**] dialog.

Tip

For VB-C300 and VB-C60, you can return the focus to the default setting by checking the [**Focus is returned to default when the camera is operated**] option.

Change the Preset Order

1. **Check the [Preset Tour] box and click [Settings].**

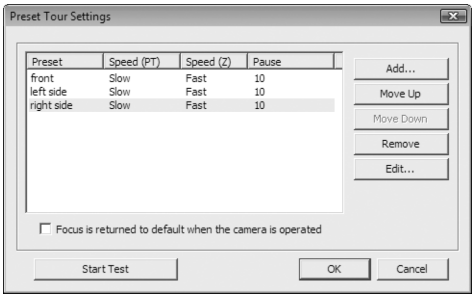
   The [Preset Tour Settings] dialog appears.

2. **Select a preset to change the order from the list, and click [Move Up] or [Move Down].**

Delete a Preset

1. **Check the [Preset Tour] box and click [Settings].**

   The [Preset Tour Settings] dialog appears.


Preset Tour Settings
Add...
Move Up
Move Down
Remove
Edit...
Start Test
OK
Cancel

Preset	Speed (PT)	Speed (Z)	Pause
front	Slow	Fast	10
left side	Slow	Fast	10
right side	Slow	Fast	10

☐ Focus is returned to default when the camera is operated

2. **Select a preset to delete from the list and click [Remove].**

3. **Click [OK].**

   This returns to the [Preset Tour Settings] dialog.

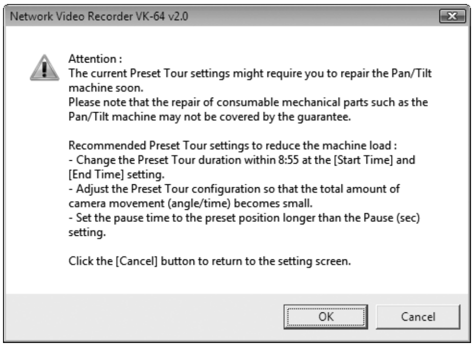
Note

When you delete camera server's presets, please be sure to check presets of VK-64/VK-16.

Note

If the following warning appears, change the settings according to the tables below.

Warning example



Attention :
The current Preset Tour settings might require you to repair the Pan/Tilt machine soon.
Please note that the repair of consumable mechanical parts such as the Pan/Tilt machine may not be covered by the guarantee.

Recommended Preset Tour settings to reduce the machine load :
- Change the Preset Tour duration within 8:55 at the [Start Time] and [End Time] setting.
- Adjust the Preset Tour configuration so that the total amount of camera movement (angle/time) becomes small.
- Set the pause time to the preset position longer than the Pause (sec) setting.

Click the [Cancel] button to return to the setting screen.

* The tour time depends on the settings.

Click [**Cancel**] to return to the setting screen.
Click [**OK**] to save the current settings.
(If you are using the Preset Setting Tool, click [**Save**] on the setting page of the tool)

Endurance of VB-C50i and VB-C300's pan/tilt mechanisms are approximately 100,000 round trips at the full range. The total tour time depends on the combination of the movement rate, movement range, and still time. See the following tables.

Total tour time for 100,000 round trips in the pan direction (estimated).

Movement rate (PT) is 1.

Still time (sec.)	Movement range in the pan direction (angle)		
	± 50	±100	±150
0	3872	3825	3809
10	5666	4722	4407
20	7555	5666	5037
30	9444	6611	5666

(Unit: Time)

Movement rate (PT) is 2.

Still time (sec.)	Movement range in the pan direction (angle)		
	±50	±100	±150
0	1983	1936	1920
10	3777	2833	2518
20	5666	3777	3148
30	7555	4722	3777

(Unit: Time)

Example: If the movement rate (PT) is 1, still time is 30 seconds, and movement range (angle) in the pan direction is 50 degrees, it takes approximately 9,444 hours for 100,000 round trips in the pan direction.

Endurance of VB-C60's pan/tilt mechanism is approximately 300,000 round trips at the full range.

Total tour time for 300,000 round trips in the pan direction (estimated).

Movement rate (PT) is 1.

Still time (sec.)	Movement range in the pan direction (angle)		
	± 50	±100	±150
0	11616	11475	11427
10	17000	14166	13222
20	22666	17000	15111
30	28333	19833	17000

(Unit: Time)

Movement rate (PT) is 1.

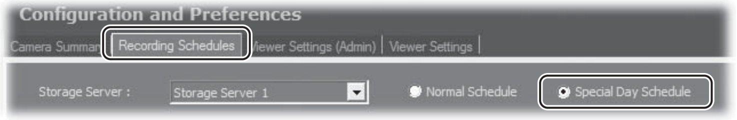
Still time (sec.)	Movement range in the pan direction (angle)		
	± 50	±100	±150
0	5950	5808	5761
10	11333	8500	7555
20	17000	11333	9444
30	22666	14166	11333

(Unit: Time)

Set a Special Day Schedule **VK-64/16**

Special Day Recording

[Special Day Schedule] window is used for configuring particular days such as public holidays. When [Special Day Schedule] is selected, [Normal Schedules] that conflict with [Special Day Schedules] is disabled.

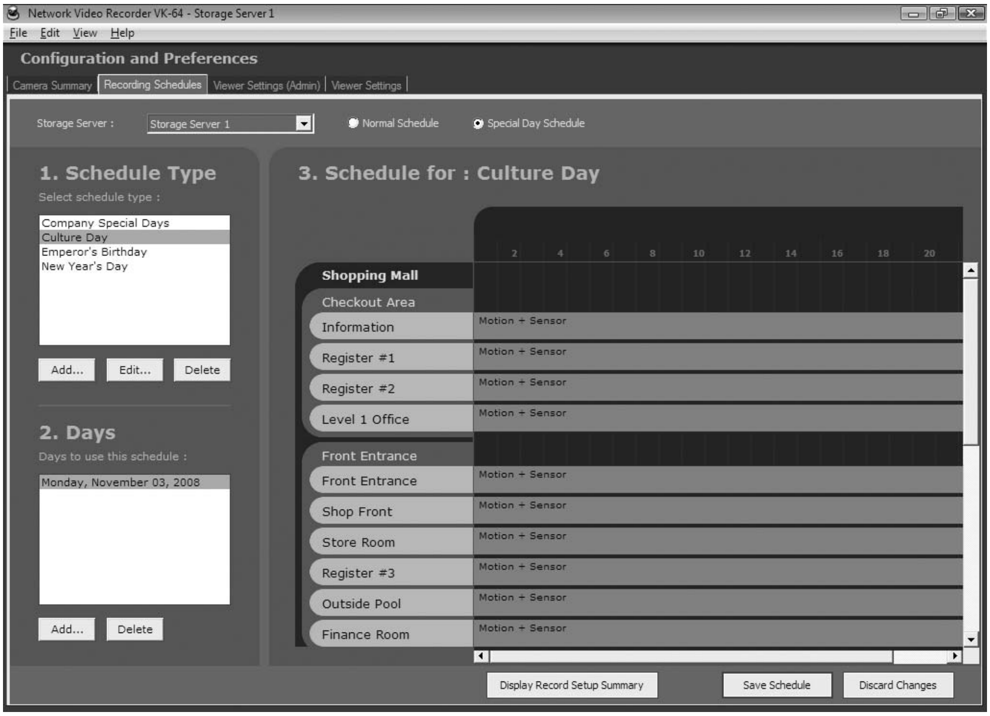

Configuration and Preferences
Camera Summary
Recording Schedules
Viewer Settings (Admin)
Viewer Settings

Storage Server : Storage Server 1

○ Normal Schedule ● Special Day Schedule

In [Configuration and Preferences] Screen, click [Recording Schedules] tab and ensure [Special Day Schedule] is selected. [Special Day Schedule] consists of:

- [Storage Server] - Select Storage Server from the list to add/edit schedules for that server. Associated Locations and Zones are displayed in the Schedule Area.
- [Schedule Type] - Allows you to select a schedule type. These are user-defined schedules such as Public Holidays and Long Weekends.
- [Days] list - Allows you to choose a day to use this schedule.
- Schedule Area - Covers a single day, 24 hours. Overrides a Normal day schedule.


Network Video Recorder VK-64 - Storage Server 1
File
Edit
View
Help
Configuration and Preferences
Camera Summary
Recording Schedules
Viewer Settings (Admin)
Viewer Settings
1. Schedule Type
Select schedule type :
Add...
Edit...
Delete
2. Days
Days to use this schedule :
Add...
Delete
3. Schedule for : Culture Day
2
4
6
8
10
12
14
16
18
20
Display Record Setup Summary
Save Schedule
Discard Changes

Storage Server : Storage Server 1

○ Normal Schedule ● Special Day Schedule

Company Special Days
Culture Day
Emperor's Birthday
New Year's Day

Monday, November 03, 2008

Shopping Mall

Checkout Area
Information: Motion + Sensor
Register #1: Motion + Sensor
Register #2: Motion + Sensor
Level 1 Office: Motion + Sensor

Front Entrance
Front Entrance: Motion + Sensor
Shop Front: Motion + Sensor
Store Room: Motion + Sensor
Register #3: Motion + Sensor
Outside Pool: Motion + Sensor
Finance Room: Motion + Sensor

Add, Edit and Delete a Schedule Type

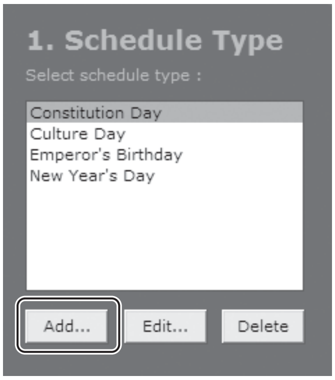
[Add Schedule Type] dialog allows you to create a name for a new schedule type, for example, a public holiday. You should create a schedule type first before you can associate days with it. There is no limit to the number of schedule type that can be added.

To launch the dialog and add a Special Day Schedule.

[Add Schedule Type]

1. Click [Add].

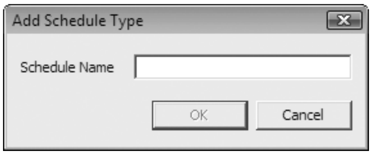
   The [Add Schedule Type] dialog appears.


1. Schedule Type
Select schedule type :
Constitution Day
Culture Day
Emperor's Birthday
New Year's Day
Add...
Edit...
Delete

2. Enter name in the [Schedule Name] area, for example "Company Holidays".
3. Click [OK].

   The schedule type is added and the dialog closes.

   The new name will appear in the [Schedule Type] list.

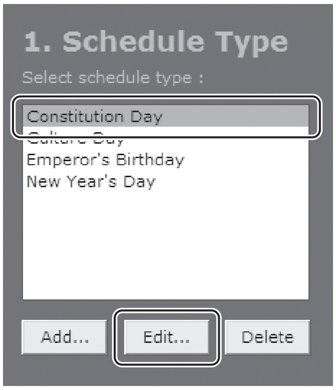

Add Schedule Type
Schedule Name
OK
Cancel

Note

- The scheduling area functions are the same as the Normal Recording Schedule but only covers a single day (from 00:00 hrs. to 24:00 hrs). To have a special day schedule run over a long weekend (Fri, Sat & Sun), all dates of three days should be added to the list of days to use the schedule.
- When Special Day Schedules are running, Normal Schedules are disabled. If an invalid schedule exists, the following warning message will be displayed. "There is a camera with no recording schedule. Are you sure to save the settings?"

Edit a Schedule Type

1. In the [Special Day Schedule] window, click a schedule type in the [Schedule Type] list to select it.
2. Click [Edit].

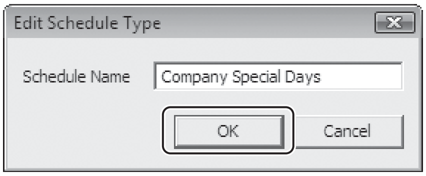

1. Schedule Type
Select schedule type :
Constitution Day
Culture Day
Emperor's Birthday
New Year's Day
Add...
Edit...
Delete

This will bring up the [Edit Schedule Type] dialog.

Enter a new name. For example, you may wish to change the name "Company Holidays" to "Company Special Days".

3. Click [OK].

The new settings are saved and the dialog closes.

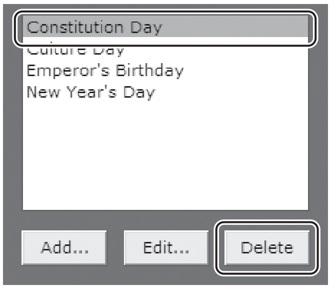

Edit Schedule Type
OK
Cancel

Schedule Name: Company Special Days

Delete a Schedule Type

1. In the [Special Day Schedule] window, click a schedule type in the [Schedule Type] list to select it.
2. Click [Delete].

The schedule type is deleted.


Constitution Day
Culture Day
Emperor's Birthday
New Year's Day
Add...
Edit...
Delete

Note

If you delete a schedule type where there are dates associated with that schedule, a warning will appear. Delete the associated dates before deleting the schedule type.

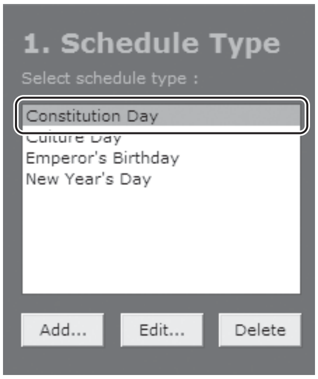
Add and Delete a Day

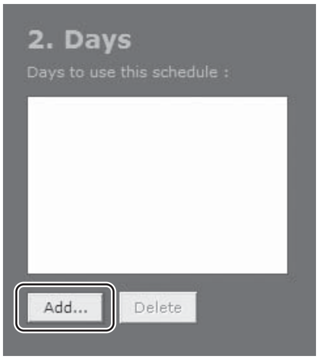
[Select Date] calendar allows you to select a day that can be used for the schedule type.

To add a day, operate as follows:

Add a Day

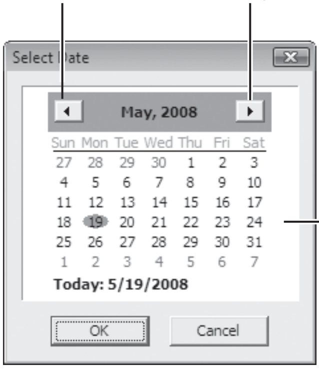
1. In the [Special Day Schedule] window, click a schedule type in the Schedule Type list, for example, "Company Holidays" (created on P. 4-62) and then in the [Days] list click [Add].


1. Schedule Type
Select schedule type :
Constitution Day
Culture Day
Emperor's Birthday
New Year's Day
Add...
Edit...
Delete


2. Days
Days to use this schedule :
Add...
Delete

This will bring up the [Select Date] calendar (see below).

2. Click to select a day in the calendar, then click [OK].


Select Date
May, 2008
Sun Mon Tue Wed Thu Fri Sat
27 28 29 30 1 2 3
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31
1 2 3 4 5 6 7
Today: 5/19/2008
OK
Cancel

Click to scroll back through the months.

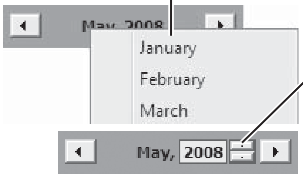
Click to scroll forward through the months.

Click a day to highlight it, then click [OK] to bring up that day in the [Days] list.

Click [Add] again to add another day to the same schedule type if you wish.

Added days are shown in the [Days] list (see example on next page).

Other calendar selection methods are shown on the next page.

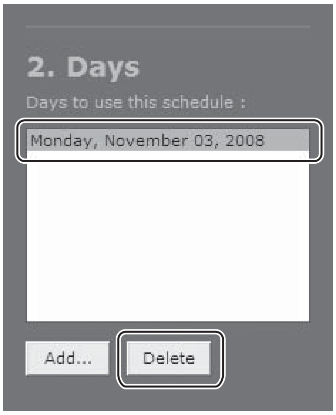

May, 2008
January
February
March
May, 2008

Alternatively, click the current month and a month list will appear.

To select another year, click the current year and scroll down or back up, using the up/down arrows.

Delete a Day

1. In the [Special Day Schedule] window, click a schedule type in the [Schedule Type] list, for example, "Company Holidays" and then in the [Days] list click one of the days associated with the schedule type.
2. Click [Delete] below the [Days] list. The day is deleted from the schedule type.

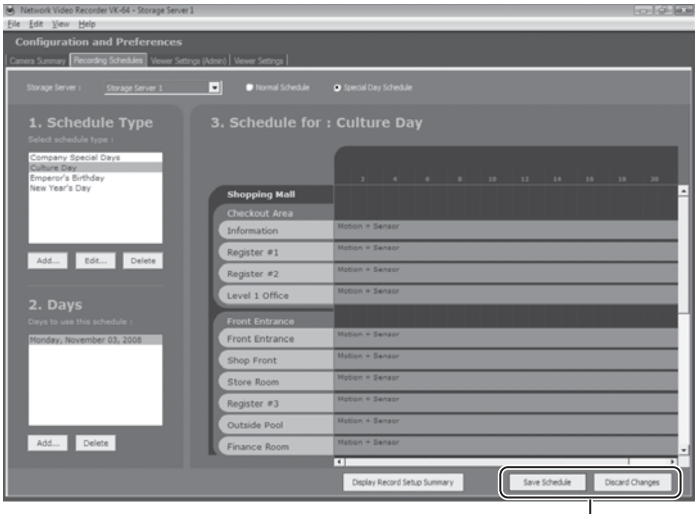

2. Days
Days to use this schedule :
Add...
Delete

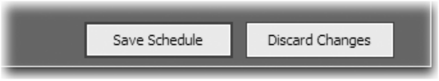
Monday, November 03, 2008

Note

- If you attempt to associate the same day with different special day schedules, a warning brings up and asked to delete the other entry before creating a new one.
- Expired days are listed in italics.

Save Changes


Network Video Recorder VK-64 - Storage Server 1
File Edit View Help
Configuration and Preferences
Camera Summary
Recording Schedules
Viewer Settings (Admin)
Viewer Settings
Storage Server :
Storage Server 1
Normal Schedule
Special Day Schedule
1. Schedule Type
Select schedule type :
Company Special Days
Culture Day
Emperor's Birthday
New Year's Day
Add...
Edit...
Delete
2. Days
Days to use this schedule :
Monday, November 03, 2008
Add...
Delete
3. Schedule for : Culture Day
Shopping Mall
Checkout Area
Information
Register #1
Register #2
Level 1 Office
Front Entrance
Front Entrance
Shop Front
Store Room
Register #3
Outside Pool
Finance Room
Motion + Sensor
Display Record Setup Summary
Save Schedule
Discard Changes


Save Schedule
Discard Changes

The bottom right-hand corner of the [Recording Schedule] window consists of two buttons, [Save Schedule] and [Discard Changes].

1. Click [Save Schedule] to keep all your settings

   The settings are then saved to the Storage Server.

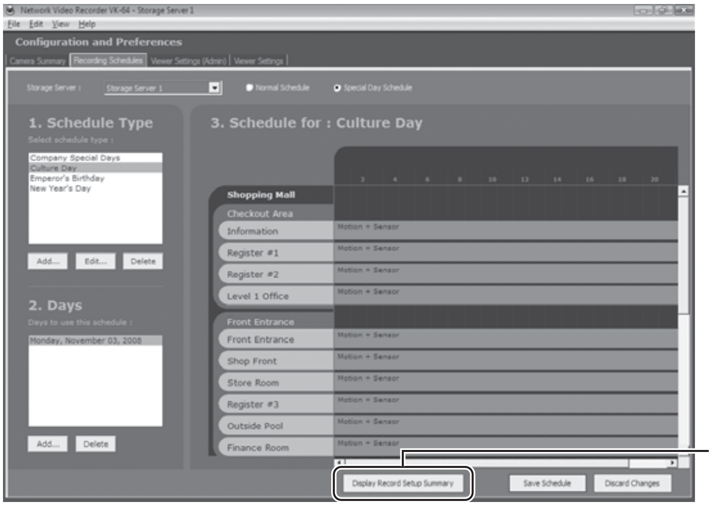
   Click [Discard Changes] to cancel any changes you have made.

2. If you wish to return to the Viewer, select [View] > [Viewing Screen] from the menu bar.

Display Recording Setting Summary

Check Summary Information of a Recording Schedule

Display the summary information of the set recording schedule.



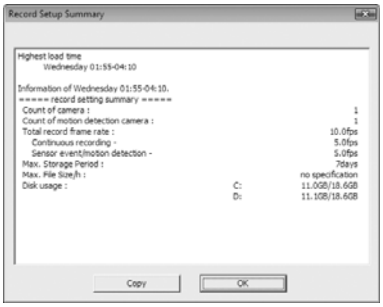
Storage Server : Storage Server 1

○ Normal Schedule ● Special Day Schedule

Network Video Recorder VK-64 - Storage Server 1
File Edit View Help
Configuration and Preferences
Camera Summary
Recording Schedules
Viewer Settings (Admin)
Viewer Settings
1. Schedule Type
Select schedule type :
Company Special Days
Culture Day
Emperor's Birthday
New Year's Day
Add...
Edit...
Delete
2. Days
Days to use this schedule :
Monday, November 03, 2008
Add...
Delete
3. Schedule for : Culture Day
2 4 6 8 10 12 14 16 18 20
Shopping Mall
Checkout Area
Information
Register #1
Register #2
Level 1 Office
Front Entrance
Front Entrance
Shop Front
Store Room
Register #3
Outside Pool
Finance Room
Motion + Sensor
Display Record Setup Summary
Save Schedule
Discard Changes

[Display Record Setup Summary] is located at the center-bottom of the [Special Day Schedule] window.

Click [Display Record Setup Summary] to display the [Record Setup Summary] dialog.



Record Setup Summary
Copy
OK

```
Highest load time
        Wednesday 01:55-04:10

Information of Wednesday 01:55-04:10.
===== record setting summary =====
 Count of camera :                                      1
 Count of motion detection camera :                     1
 Total record frame rate :                        10.0fps
   Continuous recording -                          5.0fps
   Sensor event/motion detection -                 5.0fps
 Max. Storage Period :                              7days
 Max. File Size/h :                      no specification
 Disk usage :                     C:        11.0GB/18.6GB
                                  D:        11.1GB/18.6GB
```

The [Record Setup Summary] dialog shows the following information for the time period where the highest load is expected when the schedule is performed.

Number of Camera Servers
Number of Camera Servers with Motion Detection
Total Recording Frame Rate
  Total Recording Frame Rate (Continuous Recording)
  Total Recording Frame Rate (Sensor/Motion Detection Recording)
Maximum Retained History
Maximum File Size/Duration
Disk Space Used

After confirming information, check the details and click [OK] to close the [Record Setup Summary] dialog.

Note

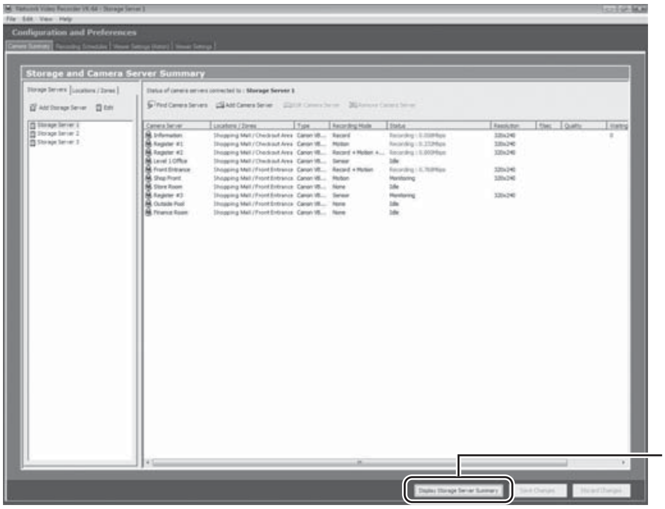
If the load is too high, adjust the recording schedule.

Tip

Click [Copy] to copy the contents of the [Recording Setting Summary] dialog to the Clipboard.

Check Summary Information of Storage Server

You can check summary information of a specified Storage Server.


Network Video Recorder V4.4x - Storage Server 1
File Edit View Help
Configuration and Preferences
Camera Summary
Recording Schedules
Viewer Settings (Kiosk)
Viewer Settings
Storage and Camera Server Summary
Storage Servers
Locations / Zones
Add Storage Server
Edit
Storage Server 1
Storage Server 2
Storage Server 3
Find Camera Servers
Add Camera Server
Edit Camera Server
Remove Camera Server
Display Storage Server Summary
Save Changes
Discard Changes

Status of camera servers connected to : **Storage Server 1**

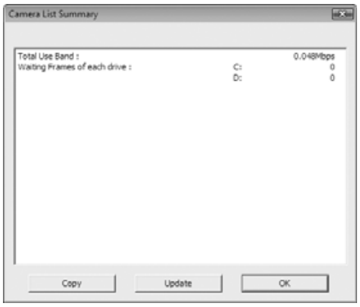
Camera Server	Locations / Zones	Type	Recording Mode	Status	Resolution	Fps	Quality	Waiting
Information	Shopping Mall / Checkout Area	Canon VB...	Record	Recording : [illegible]	320x240			0
Register #1	Shopping Mall / Checkout Area	Canon VB...	Motion	Recording : [illegible]	320x240			
Register #2	Shopping Mall / Checkout Area	Canon VB...	Record + Motion +...	Recording : [illegible]	320x240			
Level 1 Office	Shopping Mall / Checkout Area	Canon VB...	Sensor	Idle				
Front Entrance	Shopping Mall / Front Entrance	Canon VB...	Record + Motion	Recording : [illegible]	320x240			
Shop Front	Shopping Mall / Front Entrance	Canon VB...	Motion	Monitoring	320x240			
Store Room	Shopping Mall / Front Entrance	Canon VB...	None	Idle				
Register #3	Shopping Mall / Front Entrance	Canon VB...	Sensor	Monitoring	320x240			
Outside Pool	Shopping Mall / Front Entrance	Canon VB...	None	Idle				
Finance Room	Shopping Mall / Front Entrance	Canon VB...	None	Idle				

The [Display Storage Server Summary] button is in the bottom center of the [Camera Summary] screen.

Tip

- The [Display Storage Server Summary] button is gray out in Storage Servers in older version.
- When the [Locations/Zones] tab is selected, the [Display Storage Server Summary] button is gray out.

Click the [Display Storage Server Summary] button to display the [Camera List Summary] dialog box.


Camera List Summary
Copy
Update
OK

```
Total Use Band :                          0.048Mbps
Waiting Frames of each drive :       C:           0
                                     D:           0
```

The following information is displayed in the [Camera List Summary] dialog box.

Total bandwidth usage (units of Mbps)
Number of frames queued for writing to each drive of the Storage Server

Check the details and click [**OK**] to close the [**Camera List Summary**] dialog box.

Note

- The [**Camera List Summary**] dialog box displays information about the Storage Server selected in the Storage Server List. It does not display the totals for all Storage Servers.
- The number of frames queued for writing displayed here is the number of frames queued for recording.
- If the number of frames queued for writing always exceeds 5,000, reduce the video recording frame rate, or decrease the image size or quality to reduce the number of frames queued for writing. If the number of frames queued for writing exceeds 10,000, dropped frames occur.
- Click the [**Copy**] button to copy the contents of the [**Camera List Summary**] dialog box to the clipboard.
- Click the [**Update**] button to update display the latest data and update the camera list display.

Tip

You can check the number of frames queued for processing for the entire frame queue of each camera on the [**Camera Summary**] screen (→ P. 4-8).

5

Viewer Reference

Chapter Overview

This chapter explaines how to use and configure the Viewer.

Set Viewer

Explains how to configure settings that are specific to the Viewer.

Arrange and Save Layouts

Explains how to arrange layouts and set layout sequences.

Video Window Operation

Explains how to create a video window and display it in the Viewing Area and control the Camera Server.

Use Timeline and View Events

Explains how to use the Timeline for live and recorded viewing as well as view and search events.

Viewer Operation Flow

[Location] list (→ P. 5-31)
Drop-down menu indicating locations available in the system.

Menu bar
Access common menus from here.

[Zone] list (→ P. 5-31)
Drop-down menu indicating zones within a location.

[Camera Control] Panel (→ P. 5-39)
[Camera Control] Panel enables you to control a camera and quickly determine a camera position.

Event indicator (→ P. 5-37)
Color bar is displayed at the top of live Video Windows when an event occurs (if enabled).

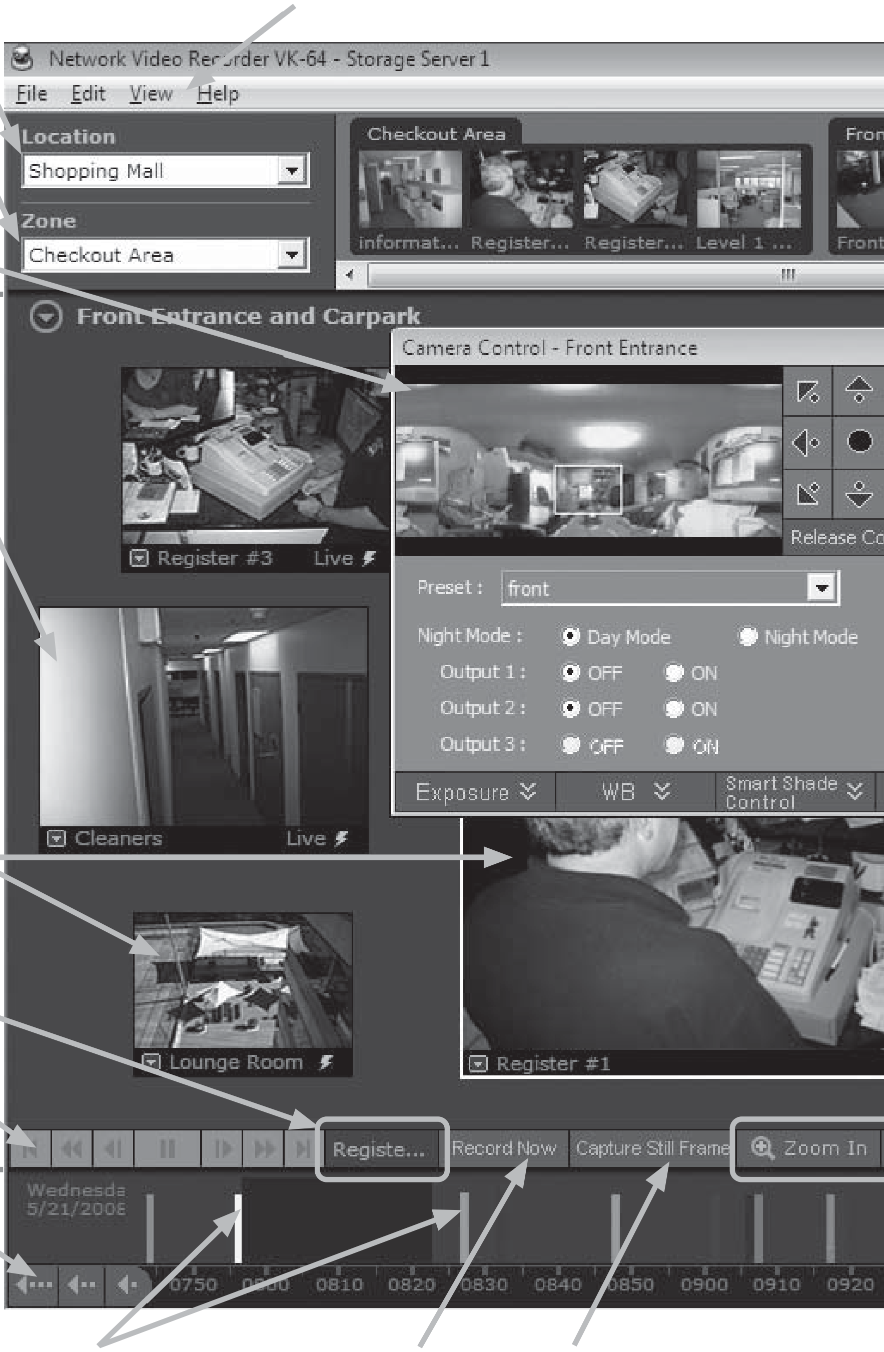
Viewing Area for Video Windows (→ P. 5-10)
Video Windows can be arranged here. Video Windows can be re-sized as well.
They can also be arranged into a uniform grid.

Video Window (→ P. 5-32)
Recorded videos and live videos are displayed in these windows.

Camera Server (→ P. 5-48)
Name of the Camera Server currently selected.

Playback control (→ P. 5-48)
Click the VCR-like controls to play, rewind, fast forward or jump to previous and next events.

Timeline control (→ P. 5-48)
Scroll forwards through the current day or jump forward incrementally by day or week.


Network Video Recorder VK-64 - Storage Server 1
File
Edit
View
Help
Location
Shopping Mall
Zone
Checkout Area
Checkout Area
informat...
Register...
Register...
Level 1 ...
Fron
Front
Front Entrance and Carpark
Camera Control - Front Entrance
Release Co
Register #3
Live
Cleaners
Live
Lounge Room
Register #1
Registe...
Record Now
Capture Still Frame
Zoom In
Wednesda
5/21/2008
0750
0800
0810
0820
0830
0840
0850
0900
0910
0920

Preset : front

Night Mode : ● Day Mode ○ Night Mode

Output 1 : ● OFF ○ ON

Output 2 : ● OFF ○ ON

Output 3 : ● OFF ○ ON

Exposure
WB
Smart Shade Control

Timeline (→ P. 5-48)
Past date and time as well as events which occurred are displayed here. Events are displayed as bars colored according to the priority. Click and drag the Time bar to go back or forwards in time.

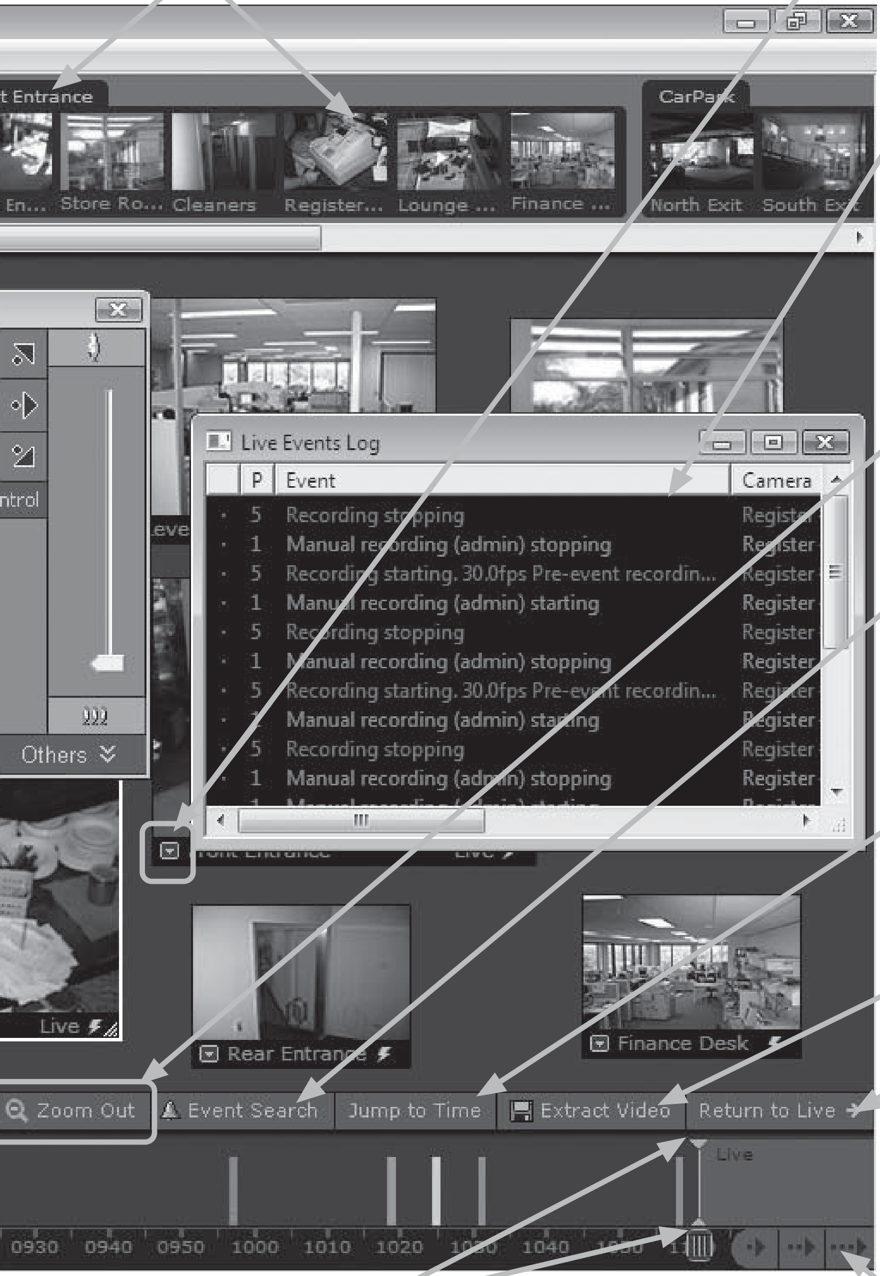
[Record Now] button (→ P. 5-52)
A instant manual recording for one minute.

[Capture Still Frame] button (→ P. 5-53)
Click to keep the current image on a Video Window.

Camera Selection Area (→ P. 5-30)
Thumbnails of Camera Servers added to each zone are displayed here. Thumbnail can be dragged onto the Viewing Area for viewing.

Video window menu icon (→ P. 5-43)
Select preset camera angles, custom pan, tilt and zoom, and select a Video Window size.

[Live Events Log] list (→ P. 5-56)
Indicates events that have been recorded on Storage Servers after the Viewer was launched.


t Entrance
CarPark
En...
Store Ro...
Cleaners
Register...
Lounge ...
Finance ...
North Exit
South Exit
ntrol
Others
Live Events Log
Live
Rear Entrance
Finance Desk
Zoom Out
Event Search
Jump to Time
Extract Video
Return to Live
Live
0930
0940
0950
1000
1010
1020
1030
1040
1050
1100

P	Event	Camera
5	Recording stopping	Register
1	Manual recording (admin) stopping	Register
5	Recording starting. 30.0fps Pre-event recordin...	Register
1	Manual recording (admin) starting	Register
5	Recording stopping	Register
1	Manual recording (admin) stopping	Register
5	Recording starting. 30.0fps Pre-event recordin...	Register
1	Manual recording (admin) starting	Register
5	Recording stopping	Register
1	Manual recording (admin) stopping	Register

[Zoom In/Zoom Out] buttons (→ P. 5-53)
Click to zoom in or out the Timeline.

[Event Search] button (→ P. 5-58)
Click to bring up a dialog and enter searching condition such as time range, Location/Zone and priority to find the event which occured in the past.

[Jump to Time] button (→ P. 5-51)
Click to enter a specific date and time to jump to, to start playing recorded video. The Timeline moves to the specified time.

[Extract Video] button (→ P. 5-54)
Click to extract a segment of video to save as file.

[Return to Live] button (→ P. 5-55)
Click to return the Timeline Playhead to the current time. If you click this button while playing recorded video, the selected Video Window will return to live video.

Timeline control (" P. 5-49)
Scroll forwards through the current day or jump forward incrementally by day or week.

Timeline Play Head (→ P. 5-50)
Drag the play head to a position on the Timeline to start playing back recorded video from that time.

Start the Viewer

Note

To start the Viewer, you need the user name and password set for the VK-64/VK-16 Storage Server.

■ How to Launch

Before launching the Viewer, make sure your monitor resolution is set to 1024 x 768 pixels or more.

Start the Viewer

To start the VK-Lite Viewer, double-click [**VK-Lite Viewer v2.1**] on the desktop.

Or, from the Windows [**Start**] menu, click [**Programs**] > [**WebView Livescope**] > [**Network Video Recorder VK-Lite v2.1**] > [**VK-Lite Viewer**].

VK-Lite
Viewer v2.1

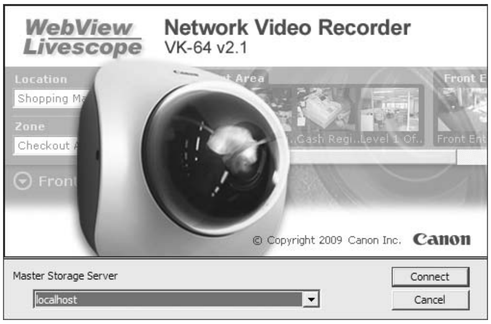
To start the VK-64/VK-16 viewer, double click [**VK Viewer v2.1**] on the desktop.

Or, from the Windows [**Start**] menu, click [**Programs**] > [**WebView Livescope**] > [**Network Video Recorder VK Series v2.1**] > [**VK Viewer**].

VK Viewer
v2.1

The connect option menu for Storage Server appears. Select the [**Master Storage Server**] option and click [**Connect**].

Start-up Screen


WebView Livescope
Network Video Recorder
VK-64 v2.1
Location
Shopping M
Zone
Checkout
Front
Area
Front E
Cash Regi..Level 1 Of..
Front Ent
© Copyright 2009 Canon Inc.
Canon
Connect
Cancel

Master Storage Server: localhost

[localhost]
Connects to Storage Server and launches Viewer. Select this option to use the local PC where Viewer is installed as Master Storage Server.

[Use IP address]
Connects to Storage Server and launches the Viewer by specifying its IP address. Select this option when Storage Server and the Viewer are installed on separate PCs.

[Not use Storage Server]
Select this option to use Viewer only without connecting to Storage Server.

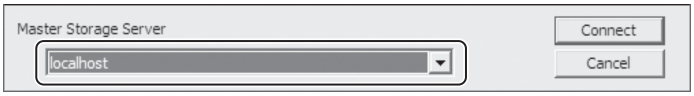
Tip

A connection error may occur when the Master Storage Server is not operating.

■ Launch by Connecting to the localhost

If you want to use the local PC where Viewer is installed as Master Storage Server, select localhost to start Viewer.

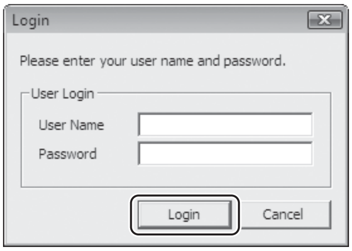
1. Select [localhost] from the drop-down menu.



Master Storage Server: localhost

Connect
Cancel

2. Click [Connect].
3. Enter your [User Name] and [Password], and click [Login].



Please enter your user name and password.

Login
User Login
User Name
Password
Login
Cancel

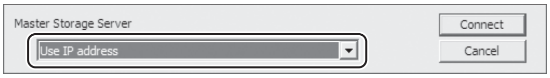
Note

The user name and password for VK-64/VK-16 entered in this step are configured by [Storage Server Configuration] dialog. They are different from the user name and password used to log Windows.

■ Launch Storage Server by Specifying the IP address

If you installed Viewer and Storage Server on separate PCs, specify IP address of Storage Server and connect Viewer to the Storage Server.

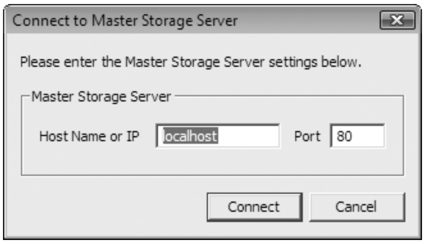
1. Select [Use IP address] from the drop-down menu.



Master Storage Server: Use IP address

Connect
Cancel

2. Click [Connect].
3. Enter IP address or host name of Master Storage Server in [Host Name or IP], and the port number in [Port].



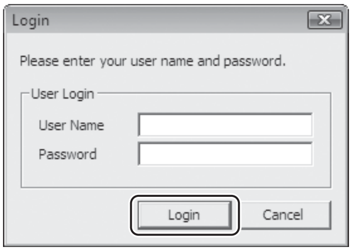
Please enter the Master Storage Server settings below.

Host Name or IP: localhost

Port: 80

Connect to Master Storage Server
Master Storage Server
Connect
Cancel

4. Click [Connect].
5. Enter your [User Name] and [Password], and click [Login].


Login

Please enter your user name and password.

Note

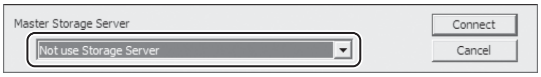
- If you need to use proxy server, you need to change the Internet option settings in the following procedure:
  1. Select [**Start**] > [**Control Panel**] > [**Internet Option**].
  2. Select the [**Connections**] tab.
  3. Click [**LAN settings**].
     Change the proxy server settings.
- If using proxy server between Viewer and Storage Server, it should not perform response buffering. Proxies which are configured to perform response buffering may lead to delays in sending small amounts of data (such as events) from the Storage Server to the Viewer. Apache proxy server does perform response buffering so is not recommended.
- You cannot transmit or receive audio when using proxy server.

■ Launch without Storage Server (Viewer Only Mode)

You can use the Viewer only without connecting to a Storage Server. When Storage Server is not used, some functions are not available.

Use Viewer only

1. Select [Not use Storage Server] from the drop-down menu.


Master Storage Server: Not use Storage Server

2. Click [Connect].

■ Functions not Available in Viewer Only Mode

When you launch the Viewer with Viewer Only Mode, the following functions are not available.

Viewing Screen

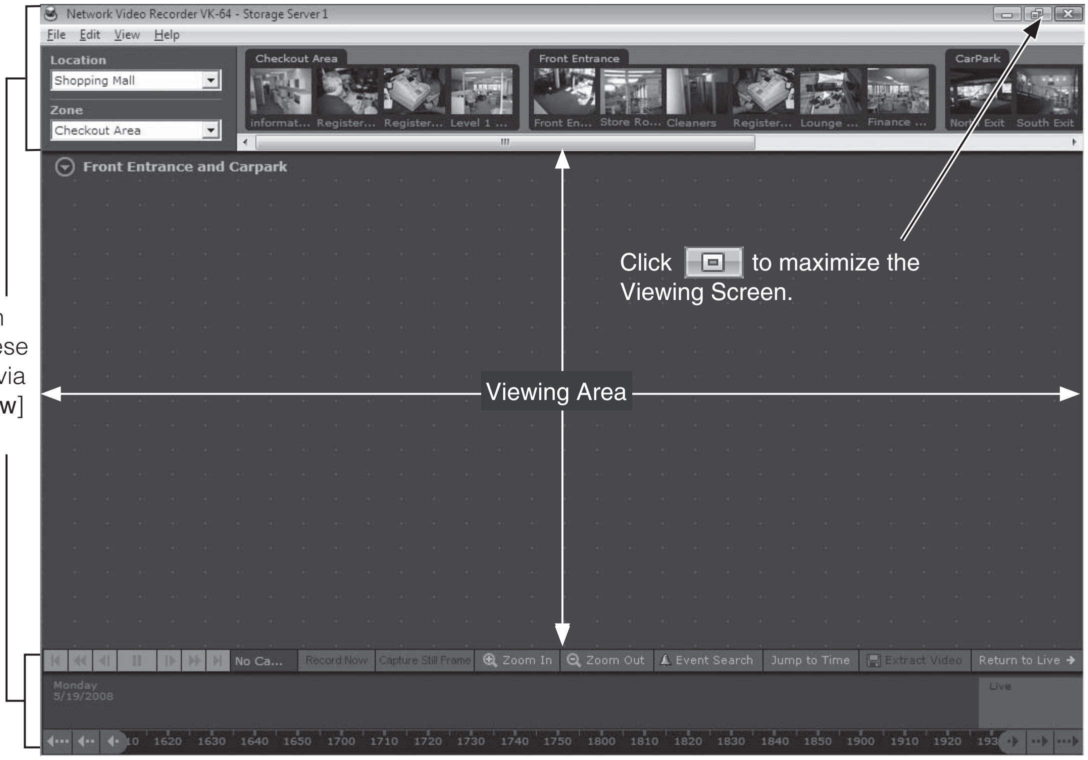
- Timeline is not displayed. [Timeline] under the [View] menu cannot be used.
- [Capture Still Frame] feature cannot be used.
- [Search Events] under the [Edit] menu cannot be used.
- [Live Events] under the [View] menu cannot be used.
- [Shared Layouts] are not displayed.
- In the [Add Layout Sequence] dialog, a type of layout is fixed to [Personal Layout Sequence].

Configuration and Preference Screen

- [Recording Schedules] tab is not displayed (→ P. 4-27). Some functions such as video recording, sensor events, and motion detection are not available.
- In the [Storage and Camera Server Summary], [Storage Servers] tab is not displayed (→ P. 4-8).
- In the [Storage and Camera Server Summary], the Camera Server list shows only Camera Server, Locations / Zones and Type (→ P. 4-8).
- In the [Add Camera Server] and [Edit Camera Server] dialog, the following items are gray (disabled):
  - [Save Recorded Video on]
  - [Camera Server Settings]
  - [Camera Settings] > [Save video in]
- In the [Viewer Settings] window (→ P. 5-13), items in the [Event Notification Settings] area are gray (disabled).

■ Viewer Start-up Window

When you start VK-64/VK-16 for the first time when no Layouts have been configured, you will notice that the Viewing Area is blank as shown below. Previously-configured cameras on the network will appear as thumbnail images in the Camera Selection Area on the top of the screen. These can be dragged onto the Viewing Area for monitoring. If your Administrator has already created a Layout for you, then the Viewing Area will display the first Personal Layout (or first Shared Layout if there are no Personal Layouts) as shown in the example on the previous pages.


Network Video Recorder VK-64 - Storage Server 1
File Edit View Help
Location
Shopping Mall
Zone
Checkout Area
Checkout Area
informat... Register... Register... Level 1 ...
Front Entrance
Front En... Store Ro... Cleaners Register... Lounge ... Finance ...
CarPark
North Exit South Exit
Front Entrance and Carpark
Click ▣ to maximize the Viewing Screen.
Viewing Area
No Ca... Record Now Capture Still Frame Zoom In Zoom Out Event Search Jump to Time Extract Video Return to Live
Monday 5/19/2008
Live
10 1620 1630 1640 1650 1700 1710 1720 1730 1740 1750 1800 1810 1820 1830 1840 1850 1900 1910 1920 193

You can hide these panels via the [**View**] menu.

See P. 5-19 for details on editing layouts.

Tip

While the Viewer Screen is active, your PC does not automatically enter the Sleep or Standby mode.

■ Viewer Start-up Option

You can set the start-up option of the Viewer to omit the display of Start-up screen (→ P. 4-3) and login screen to enter a user name and password (→ P. 4-5, P. 5-7).

You can place a shortcut icon on the Desktop for your convenience by following the method described below.

For this setting, you cannot use the shortcut icon that was automatically created on the Desktop after installing this software, which is used for starting the Viewer.

> **Note**
>
> Password can be referred through the Properties of the shortcut icon. You need to make sure that the Password is secure.

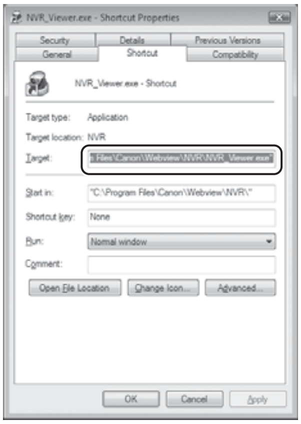
1. **Right-click on the icon for NVR_Viewer.exe located in the installation directory and select [Create Shortcut] from the menu. The shortcut icon will be created. Move it to the Desktop.**

   The default destination directory is shown below.
   <System Drive>:\Program Files\Canon\WebView\NVR

NVR_Viewer.exe - Shortcut

> **Tip**
>
> <System Drive> is a drive that contains a directory (folder) in which the Operating System files are stored. For example, if the Operating System is installed on Drive C, your system drive is Drive C.

2. **Right-click on the shortcut icon that was moved onto the Desktop and select [Properties] from the menu.**



Target type: Application
Target location: NVR
Target: s Files\Canon\Webview\NVR\NVR_Viewer.exe"
Start in: "C:\Program Files\Canon\Webview\NVR\"
Shortcut key: None
Run: Normal window
Comment:

Specify [**Target**] as follows (using alphanumeric characters)

-h=<IP address of the Storage Server>	This specification is mandatory (→ P. 4-5, P. 5-7).
-p=<port number>	It can be omitted. When omitted, 80 is specified (→ P. 4-5).
-u=<user name>	Specify the user name (→ P. 4-4).
-pw=<password>	Specify the password (→ P. 4-4).

-u and -pw can be omitted. When omitted, the start-up screen will not be displayed (→ P. 4-3, P. 5-6). Instead, the login screen for entering a username and password is displayed. When you use the Viewer alone, you also need to specify "nohost" for -h.

Example

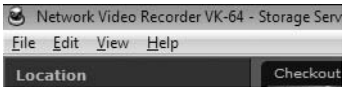
"C:\Program Files\Canon\WebView\NVR\NVR_Viewer.exe" -h=192.168.100.1 -p=80 -u=admin -pw=NVR

Make sure to enter a space after "C:\Program Files\Canon\WebView\NVR\NVR_Viewer.exe".

Menu Bar of Viewer Screen

■ Functions of Menu Bar

The following functions are available from the menu bar.

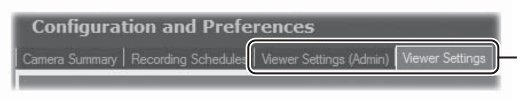


Menu	Submenu	Function
File	Change Master Storage Server	Switches master storage servers. The connection menu for storage servers is displayed.
	Exit	Closes the application.
Edit	Cut	A selected video window is deleted and transferred to the clipboard, so that the window can be pasted into the same layout or another layout.
	Copy	A selected video window is coppied into the clipboard, so that the window can be pasted into the same layout or another layout.
	Paste	A cut/copied video window is pasted into the current layout.
	Delete	A selected video window is deleted from the current layout.
		Select Delete in the [**Storage and Camera Server Summary**] screen, so that a selected storage server/camera server/location/zone is deleted.
		Select Delete in the [**Recording Schedules**] screen, so that a selected normal schedule/special day schedule is deleted.
	Select All	Selects all of the video windows in the current layout.
	Search Events	Displays the [**Event Search**] dialog.
View	Configuration	Select Configuration while the viewer window is open, so that the window switches to the [**Configuration and Preferences**] screen.
	Viewing Screen	Select Configuration while the [**Configuration and Preferences**] screen is open, so that the window switches to the viewer screen.
	Fullscreen	The menu bar and the title bar are hid and the area for displaying video windows becomes larger. Press the [**Esc**] key to return to the previous status (return to the mode before selecting the Fullscreen mode).
	Captions	Switches display and hide video window's title bar.
	Camera Selector	Switches display and hide the Camera Selection Area.
	Timeline	Switches display and hide Timeline.
	Live Events	The [**Live Events Log**] window is displayed at the same position and in the same size as prevously displayed. The checkmark in the menu means that the window is open. Select the menu item again to close the window and the menu item is unchecked.
	Camera Control	Displays the [**Camera Control**] panel], allowing the display positon settings or zoom.
	Audio Panel	Displays the [**Camera Control**] panel, allowing the display positon settings or zoom.
	Status Bar	Switches display and hide the status bar. Several information is displayed in the status bar, such as the total frame rate, CPU %, the number of displayed events, and the number of video windows.
Help	About	The [**version information**] dialog appears, showing the version information.

Viewer Setting

[Viewer Settings] window

The [**Viewer Settings**] window is used for settings such as notification priorities and the live viewing frame rate. Settings are stored on the Viewer PC, not on the Master Storage Server.



Click Viewer Settings (Admin) or
Viewer Settings (Operators).

The [**Viewer Settings**] screen is divided into tabs for administrators and guestl users depending on the settings. The [**Viewer Settings (Admin)**] tab is displayed only when the user logs in as an Administrator. Each of these tabs consists of the following settings.

[Viewer Settings (Admin)] tab

- [**Master Storage Server**] - You can switch to display or not to display the Master Storage Server option window (connection menu) on start-up, and also add/delete Master Storage Server into/from the connect menu.
- [**Layout setting**] - Confirm if the layout was preserved when quitting or when the screen changes.
- [**Event popup setting**] - Enables you to set whether video is displayed at the same time as events occur.
- [**Event Notification Settings**] - Set operator notification and adjust duration in seconds, set operator acknowledgement (recognition) of an event, set an audio alert, and suppress event display.

[Viewer Settings] tab

- [**Video Viewing Settings**] - Select the maximum viewing frame rate for live videos.
- [**Proxy Setting**] - Use this option to make an access to Storage Server via proxy server.
- [**Audio Setting**] - Set automatic termination of audio transmission after a specified period of time.
- [**Focus Operation Setting**] - Set the focus position to return to the default setting of the camera when operating the camera.
- [**Still frame setting**] - Enables you to configure the date and time to be additionally displayed on still frames.

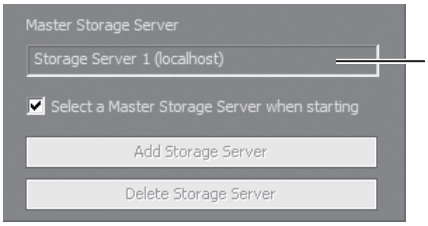
Note

Be sure to perform the operational tests after setting the viewer.

Set the Tab for Administrator

Set whether to select the Master Storage Server when the Viewer starts up

A Master Storage Server maintains settings for Camera Servers and Layouts.



Master Storage Server

Storage Server 1 (localhost)

☑ Select a Master Storage Server when starting

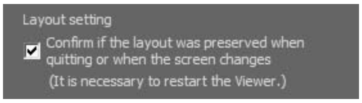
The current Master Storage Server is indicated.

The following settings are available.

1. Select the [Select a Master Storage Server when starting] checkbox to enable you to select the Master Storage Server when the Viewer starts.
2. Click [Add Storage Server] to add the current Storage Server to the connection menu.
3. Click [Delete Storage Server] to delete the current Storage Server from the connection menu.

Set layout of the Viewing Screen

If you wish to confirm whether the layout information has already been saved when finishing the Viewer or when switching to the Viewing Screen, tick the [Confirm if the layout was preserved when quitting or when the screen changes] check box and restart the Viewer. If not ticked, the layout information will not be saved.



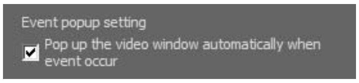
Layout setting

☑ Confirm if the layout was preserved when quitting or when the screen changes

(It is necessary to restart the Viewer.)

Set Event Popups

Select the [Pop up the video window automatically when event occur] checkbox to display the live video in the foreground and begin live viewing when an event such as a sensor on occurs.



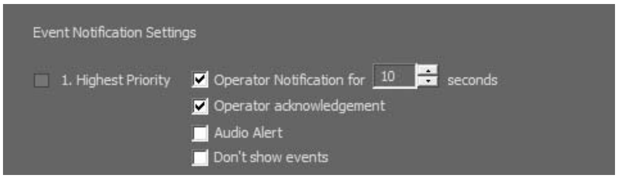
Event popup setting

☑ Pop up the video window automatically when event occur

■ Set Event Notifications

When an event occurs, it is indicated in the [**Live Events Log**] in the Viewer. In [**Event Notification**] Settings in the [**Viewer Settings**] window, [**Event Notification Settings**] area, you can set up actions based on events according to the priority of the event.

Set alert of event in each priority level



Event Notification Settings

☐ 1. Highest Priority

☑ Operator Notification for 10 seconds

☑ Operator acknowledgement

☐ Audio Alert

☐ Don't show events

In the Priority area, you configure the following settings:

1. Tick the [Operator Notification] for box to enable a notification period when an event occurs.

   Select a notification period in seconds from the [**Seconds**] drop-down menu or enter it from the keyboard (0 - 99). When a event occurs, the event flashes in the [**Live Event Log**] window for the period of time specified using this option, and a color bar indicating the event's priority light on the top of a live Video Window for one minute.

   If you specify 0 second, an event which has occurred will not flash and a color bar will light for one minute.

2. Tick the [Requires operator acknowledgement] box for the event.

   When an event occurs it will flash in the [**Live Events Log**] and the audio alert will sound (if specified) until the operator double-clicks on the event (that is, the notification time will not apply to the event in the event log).

3. Tick the [Audio Alert] box to have an audio alert play during the event notification period.

   The Windows system sound [**Exclamation**] is used for audio alerts (For a PC with no sound port installed, a beep sound is used). This sound repeats for the duration of the [**Operator Notification for __ seconds**].
   If [**Operator Notification for __ seconds**] is not set, the audio alert is played once.

4. Tick the [Don't show events] to have the event not displayed on the Timeline of the Viewing screen or on the [Live Events Log] window even if the event occurs.

Tip

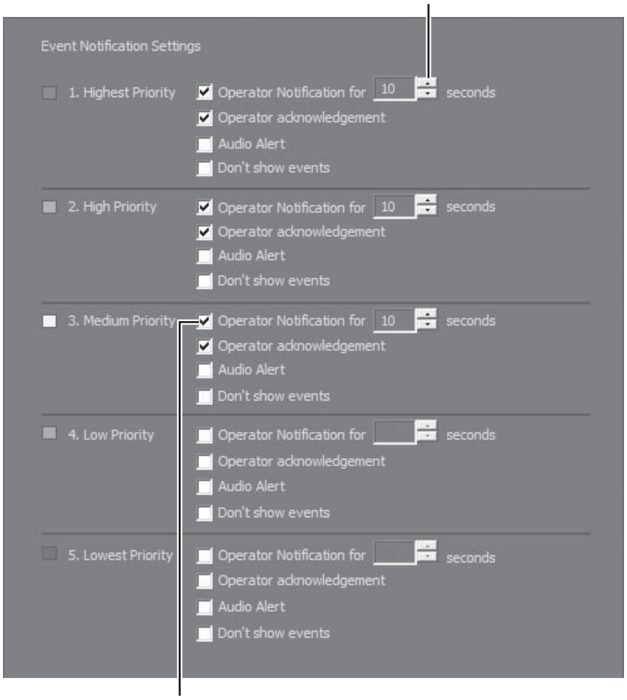
Even if **[Don't show events]** is ticked, events are shown in the [**Search Results**] in the [**Event Search**] dialog.

About Priorities

Set up notifications by priority from 1 (highest) to 5 (lowest). Priorities are color-coded as follows.

Color	Priority
Red	Highest
Orange	High
Yellow	Medium
Light Green	Low
Dark Green	Lowest

Set duration of alert.



Event Notification Settings

☐ 1. Highest Priority
☑ Operator Notification for 10 seconds
☑ Operator acknowledgement
☐ Audio Alert
☐ Don't show events

☐ 2. High Priority
☑ Operator Notification for 10 seconds
☑ Operator acknowledgement
☐ Audio Alert
☐ Don't show events

☐ 3. Medium Priority
☑ Operator Notification for 10 seconds
☑ Operator acknowledgement
☐ Audio Alert
☐ Don't show events

☐ 4. Low Priority
☐ Operator Notification for seconds
☐ Operator acknowledgement
☐ Audio Alert
☐ Don't show events

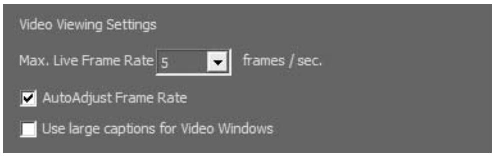
☐ 5. Lowest Priority
☐ Operator Notification for seconds
☐ Operator acknowledgement
☐ Audio Alert
☐ Don't show events

Lower priority items can have less notification settings associated with them.

Set the Tab for Guest User

■ Frame Rate Setting for live video

The maximum frame rate when displaying live video can be configured. Select the value of the frame rate from the drop-down menu. Select the [Auto Adjust Frame Rate] checkbox to have the frame rate adjusted automatically.



Video Viewing Settings

Max. Live Frame Rate 5 frames / sec.

☑ AutoAdjust Frame Rate

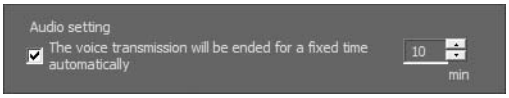
☐ Use large captions for Video Windows

Note

- If a high maximum frame rate is specified, the load on the computer CPU will be high and Viewer operations may take longer. When [Auto Adjust Frame Rate] is ticked, frame rate is automatically reduced when CPU load becomes high.
- If the resolution is set to MPEG-4, the [Max. Live Frame Rate] and [Auto Adjust Frame Rate] settings are ignored. In this case, the frame rate setting of the VB-C500D/VB-C60 is active.

■ Automatic Audio Termination Setting

The camera which is sending or receiving audio to a Viewer cannot interact with other Admin or NC Viewers. Audio transmission and reception can be terminated automatically even if you forget to disconnect the audio connection.



Audio setting

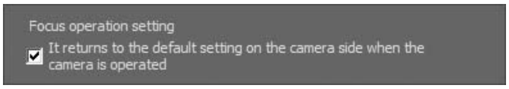
☑ The voice transmission will be ended for a fixed time automatically 10 min

When using this option, tick [The voice transmission will be ended for fixed time automatically] check box, and specify the period within the range from 1 to 60 minutes (default is 10 minutes). When the specified period of time passes during audio transmission, it will be terminated automatically.

> **Tip**
>
> Automatic termination works even while audio is being transmitted/received. However, if switching the video window to another, the audio function will become available again.

■ Focus Operation Setting

You can set the camera to return its focus mode to the default setting when the camera orientation is changed. The focus mode returns to default if it has been changed to Manual after any focus operation using a preset with focus setting defined or via Camera Control Panel.



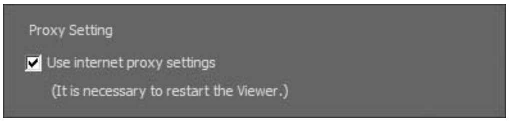
Focus operation setting

☑ It returns to the default setting on the camera side when the camera is operated

Use this option by ticking the [It returns to the default setting on the camera side when the camera is operated] check box.

■ Proxy Server Setting **VK-64/16**

When you wish to access the Storage Server Using the proxy server set in the Internet Option, tick [Use internet proxy settings] and restart the Viewer.



Proxy Setting

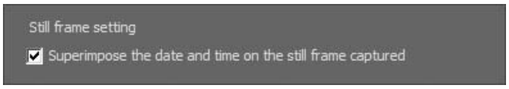
☑ Use internet proxy settings

(It is necessary to restart the Viewer.)

> **Note**
>
> To use a proxy server, you need to set the [Internet option] settings (→ P. 5-7).

■ Superimpose the Date and Time on Still Frames

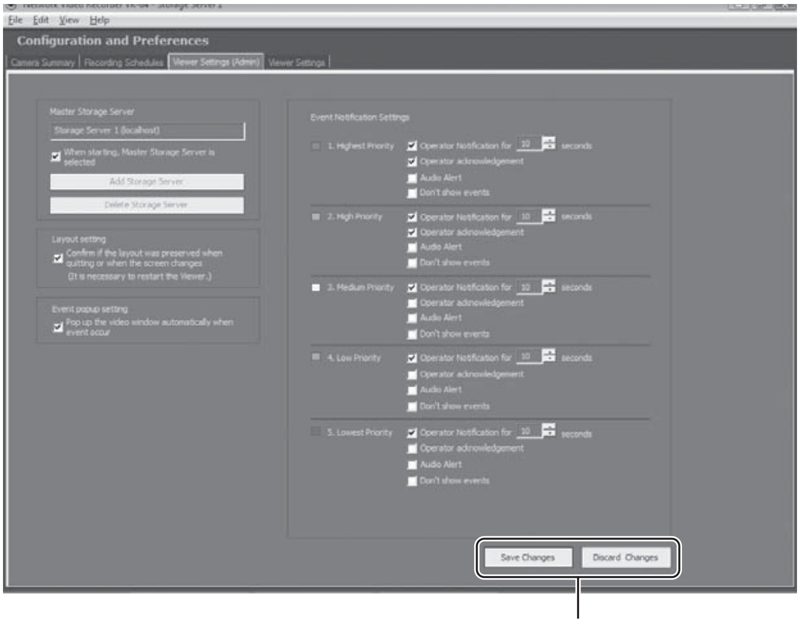
Select the [Superimpose the date and time on the still frame captured] checkbox to additionally display the date and time of capture on still frames.



Still frame setting

☑ Superimpose the date and time on the still frame captured

■ Save Viewer Settings



File
Edit
View
Help
Configuration and Preferences
Camera Summary
Recording Schedules
Viewer Settings (Admin)
Viewer Settings
Add Storage Server
Delete Storage Server
Save Changes
Discard Changes

Master Storage Server

Storage Server 1 (localhost)

☑ When starting, Master Storage Server is selected

Layout setting

☑ Confirm if the layout was preserved when quitting or when the screen changes (It is necessary to restart the Viewer.)

Event popup setting

☑ Pop up the video window automatically when event occur

Event Notification Settings

1. Highest Priority
   - ☑ Operator Notification for 10 seconds
   - ☑ Operator acknowledgement
   - ☐ Audio Alert
   - ☐ Don't show events

2. High Priority
   - ☑ Operator Notification for 10 seconds
   - ☑ Operator acknowledgement
   - ☐ Audio Alert
   - ☐ Don't show events

3. Medium Priority
   - ☑ Operator Notification for 10 seconds
   - ☐ Operator acknowledgement
   - ☐ Audio Alert
   - ☐ Don't show events

4. Low Priority
   - ☑ Operator Notification for 10 seconds
   - ☐ Operator acknowledgement
   - ☐ Audio Alert
   - ☐ Don't show events

5. Lowest Priority
   - ☑ Operator Notification for 10 seconds
   - ☐ Operator acknowledgement
   - ☐ Audio Alert
   - ☐ Don't show events

The bottom right-hand corner of the [Viewer Settings] window consists of two buttons, [Save Changes] and [Discard Changes].

- Click [Save Changes] to keep all your settings. The Viewer settings are then saved to the local disk.

Save Changes
Discard Changes

Click [Discard Changes] to cancel any modifications you have made.

- If you wish to return to the Viewer, select [View] > [Viewing Screen] from the menu bar.

Arrange and Save Layouts

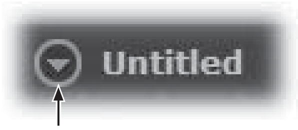
This chapter details how to create and save Video Window Layouts and Layout Sequences.

Manage Video Layouts

■ Layout menu

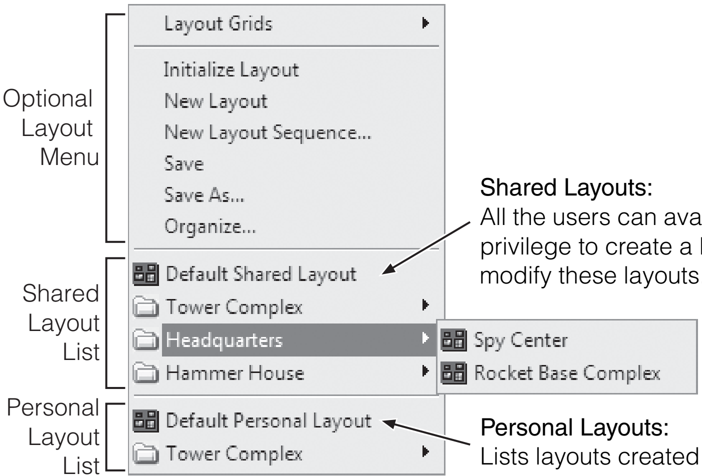
The Layout menu allows you to save particular Video Window layouts for easy monitoring.

The name of the currently-displayed layout can be found in the top-left corner of the Viewing Area, next to the Layout button. You can create a new layout, save a layout or open and rename a previously-saved layout.



Click the Layout button to open the Layout menu. You can also right-click anywhere in the Viewing Area to display the Layout menu.

Below the Layout menu options, existing Layouts are displayed and divided into two sections.


Optional Layout Menu
Layout Grids
Initialize Layout
New Layout
New Layout Sequence...
Save
Save As...
Organize...
Shared Layout List
Default Shared Layout
Tower Complex
Headquarters
Hammer House
Spy Center
Rocket Base Complex
Personal Layout List
Default Personal Layout
Tower Complex

Shared Layouts:
All the users can available these layouts. You need Administrator privilege to create a layout (→ P. 3-25). Guest users cannot modify these layouts.

Personal Layouts:
Lists layouts created by the current user. These are shown under the Shared Layouts list to distinguish the different types of layouts. Other users cannot use them.

Tip

The layout displayed when launching the Viewer is the first layout listed in the Personal Layouts (or in the Shared Layouts if there is no Personal Layouts).

To create a new layout (a previously-saved layout is displayed):

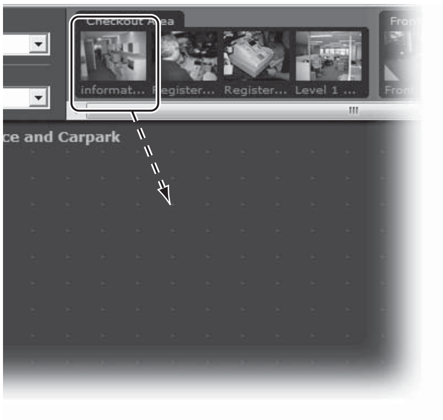
Click the Layout button to open the menu, and then select [**New Layout**].

The Viewing Area will become blank and the default layout name [**Untitled**] will be displayed.

The process of creating folders and saving a layout could be done in the following order:

1		2		3
Organize and create Layout folders	→	Arranging Video Windows in Layout	→	Save Layout to a folder

Drag the Camera Server's thumbnails onto the Viewing Area to create the layout.

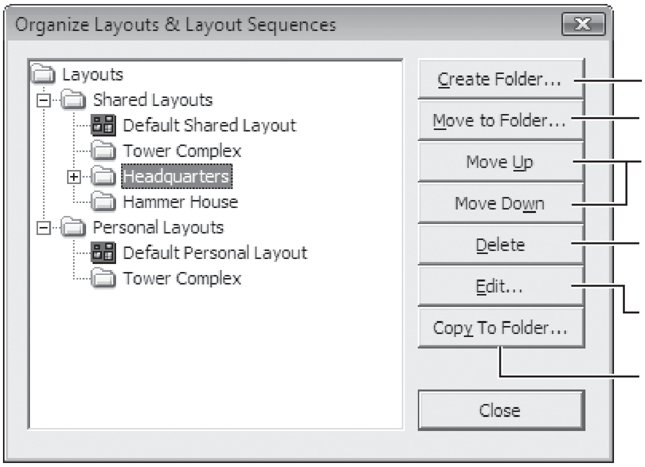

Checkout Area
informat...
Register...
Register...
Level 1 ...
ce and Carpark

■ Organize Layouts and Layout Sequences

The [**Organize Layouts & Layout Sequences**] dialog allows you to create folders and sub-folders in which to save item (layouts and layout sequences). To display the dialog:

Open the Layout menu and select [Organize]

The [**Organize Layouts & Layout Sequences**] dialog opens (Administrator version shown). The [**Shared Layouts**] folder will not display if you have logged in as an Operator.


Organize Layouts & Layout Sequences
Layouts
Shared Layouts
Default Shared Layout
Tower Complex
Headquarters
Hammer House
Personal Layouts
Default Personal Layout
Tower Complex
Create Folder...
Move to Folder...
Move Up
Move Down
Delete
Edit...
Copy To Folder...
Close

Create a new folder.

Move an item to another folder.

Move an item up or down within a folder.

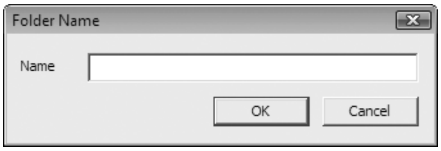
Delete an item or folder containing items.

Edit an item name or folder name.

Copy an item to another folder.

Create a new folder

1. In the [Organize Layouts & Layout Sequences] dialog, click on a shared or personal folder and then click [Create Folder]. The Folder Name dialog appears.
2. Enter a name up to 50 characters and click [OK].


Folder Name
Name
OK
Cancel

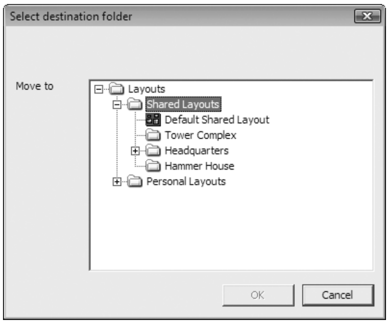
The new folder will appear in the [**Organize Layouts & Layout Sequences**] dialog.

Move or Copy a layout or layout Sequence to another folder

1. In the [Organize Layouts & Layout Sequences] dialog, click an item to highlight it, then click [Move to Folder].

   The [**Select destination folder**] dialog opens showing a list of created folders.

2. Click to select the target folder in the list and click [OK].


Select destination folder
Move to
Layouts
Shared Layouts
Default Shared Layout
Tower Complex
Headquarters
Hammer House
Personal Layouts
OK
Cancel

The item will be moved into that folder.

If you selected [**Copy to Folder**], you can copy items in the same manner.

Move an entry up or down

Click an item or folder to highlight it, then click [**Move Up**] or [**Move Down**]. The item will move up or down within a folder.

Edit or delete a layout or folder

Click an item or folder to highlight it, then click [**Edit**]. The respective [**Layout Name**] or [**Folder Name**] dialog will appear for you to overwrite a new name.

Click an item or folder to highlight it, then click [**Delete**]. If you have Operator status, you will not be able to delete a shared layout or layout sequence.

Note

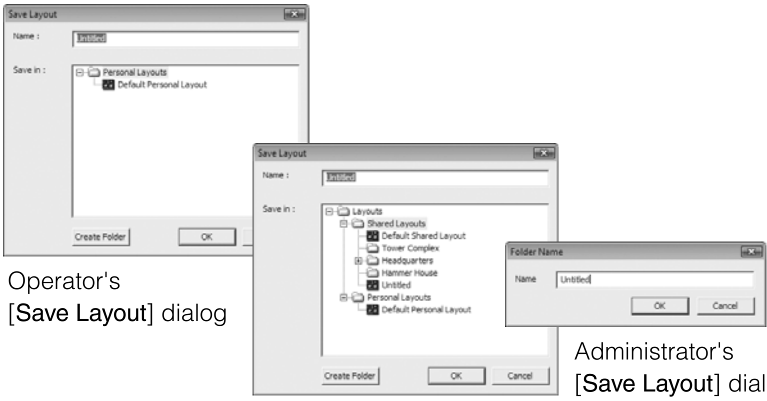
- You cannot change the parent folder names, [**Shared Layouts**] or [**Personal Layouts**].
- You need Administrator privilege to manage shared folders (→ P. 3-25).

■ Save a Layout or Layout Sequence

Administrators and Operators can save layouts and layout sequences to an existing folder or a new folder via the [Save Layout] dialog.

Step 1: Open the Layout menu and select [Save] or [Save As]

The Save Layout dialog opens. A New Folder button and Name field is also available for you to create a new name and location for the copied layout or layout sequence.



Save Layout

Name : Untitled

Folder Name

Name Untitled

Save in :
Personal Layouts
Default Personal Layout
Create Folder
OK
Save Layout
Save in :
Layouts
Shared Layouts
Default Shared Layout
Tower Complex
Headquarters
Hammer House
Untitled
Personal Layouts
Default Personal Layout
Create Folder
OK
Cancel
OK
Cancel

Operator's
[Save Layout] dialog

Administrator's
[Save Layout] dialog

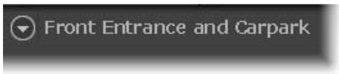
Step 2: Create a name for the layout or layout sequence

1. Change [Untitled] or an existing layout name to save the item with a new name.
2. Click a location in the list. Click to select the folder to save the layout and click [OK].

   The item is saved to that folder.

   Alternatively, click [Create Folder] to create a new folder (→ P. 5-21) and save the item in there. For example, if you wish to save an Administrator-shared layout to a personal folder.

   Once you have saved an item, the name will appear next to the Layout button in the Viewing Area.

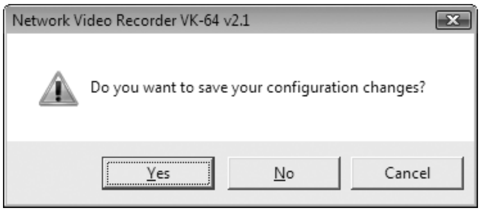


Front Entrance and Carpark

Open a previously-saved layout

Click the Layout button to open the menu and then click a layout or layout sequence in the list. The item will be loaded onto the Viewing Area.

If you select another item without saving the current item, a dialog will appear prompting you to save the current layout or layout sequence (if the [Layout setting] (→ P. 5-14) in the [Viewer Settings] window is ticked).



Network Video Recorder VK-64 v2.1

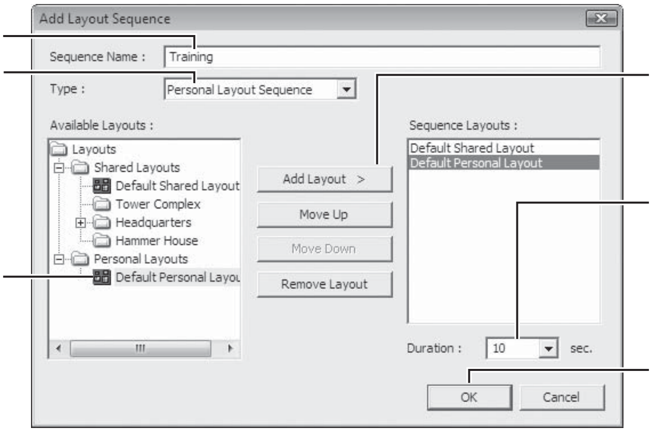
Do you want to save your configuration changes?

Yes
No
Cancel

■ Arrange Layout Sequences VK-64/16

You can set up an automated sequence of shared and personal layouts to display in the Viewing Area at set intervals.

1. From the Layout menu, select [New Layout Sequence]. The [Add Layout Sequence] dialog displays.
2. Enter a sequence name for the new layout sequence and choose a [Type] of layout sequence from the menu, [Personal Layout Sequence] or [Shared Layout Sequence] (you can switch between the two as you add layouts).
3. Use the [Add Layout >] button to add layouts to the new sequence. Click [Up] and [Down] to change the display sequence of layouts. Click [Delete] to delete the layout.
4. In the [Duration] menu, select a set duration of display time for each layout or enter a custom time, overwriting the existing time.


Add Layout Sequence
Available Layouts :
Layouts
Shared Layouts
Default Shared Layout
Tower Complex
Headquarters
Hammer House
Personal Layouts
Default Personal Layou
Add Layout >
Move Up
Move Down
Remove Layout
Sequence Layouts :
OK
Cancel

Sequence Name : Training

Type : Personal Layout Sequence

Sequence Layouts : Default Shared Layout, Default Personal Layout

Duration : 10 sec.

Enter a new name.

Select a layout sequence type.

Click on a layout to select it.

Click [**Add Layout**] to add a selected layout from the left-hand column.

Select or enter the time.
You can set the time within the range from 1 to 9999.

Click [**OK**] to bring up the Select [**destination folder**] dialog.

Shared Layout Sequence:

All the users can share these layouts. You need Administrator privilege to create a layout sequence. Normal users cannot modify these layouts.

Personal Layout Sequence:

Lists layouts created by the current user. Other users cannot use them.

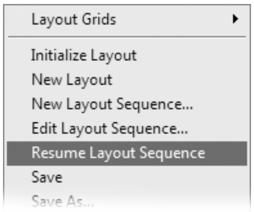
Note

You can only save layouts as a layout sequence.

Start Layout Sequences

To start the layout sequence, select it from the Layout menu.

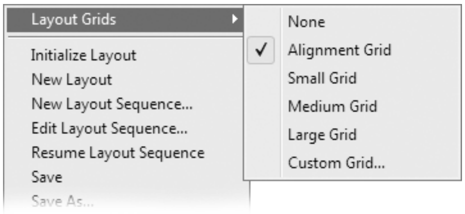
When a layout sequence is running, further options are available in the Layout menu.


Layout Grids
Initialize Layout
New Layout
New Layout Sequence...
Edit Layout Sequence...
Resume Layout Sequence
Save
Save As...

- Click [**Edit Layout Sequence**] to change settings in the currently-running layout sequence. The current sequence will be indicated as [**Paused**].
- Click [**Resume Layout Sequence**] to play the current layout sequence.

Layout Grids

You can customize your layouts by applying one of the following grids:


Layout Grids
Initialize Layout
New Layout
New Layout Sequence...
Edit Layout Sequence...
Resume Layout Sequence
Save
Save As...
None
✓ Alignment Grid
Small Grid
Medium Grid
Large Grid
Custom Grid...

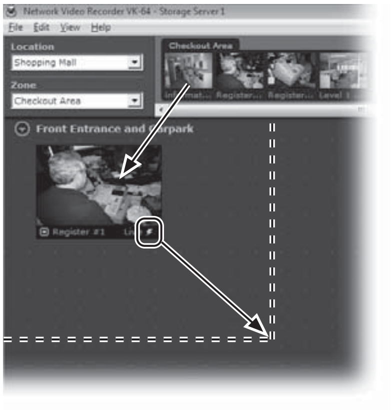
- [**None**] - You can arrange Video Windows freely.
- [**Alignment Grid**] - diplay a grid of dots in the Viewing Area. You can re-size Video Windows using the grid.
- [**Small Grid**], [**Medium Grid**] and [**Large Grid**] - diplay a small (160x120), medium (320x240) or large (640x480) grid where you can place Video Windows using the grid.
- [**Custom Grid**] - You can set the grid size (→ P. 5-28).

■ Alignment Grid

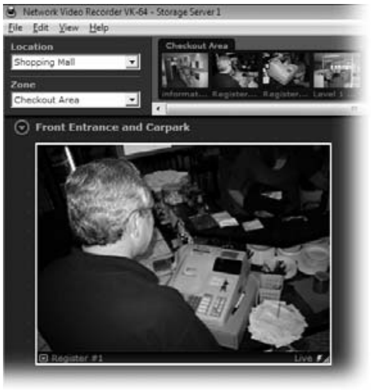
Select the [**Alignment Grid**] from the [**Layout Grids**] sub-menu. The Viewing Area displays a grid of dots. When you place a Video Window, it **snaps** to the grid boundaries.

Drag, drop and re-size a Video Window

1. In the Camera Selection Area, click a thumbnail image and drag its selection boundary onto the Viewing Area grid.


Network Video Recorder VK-64 - Storage Server 1
File Edit View Help
Location
Shopping Mall
Zone
Checkout Area
Checkout Area
Informat... Register... Register... Level 1
Front Entrance and Carpark
Register #1
Live

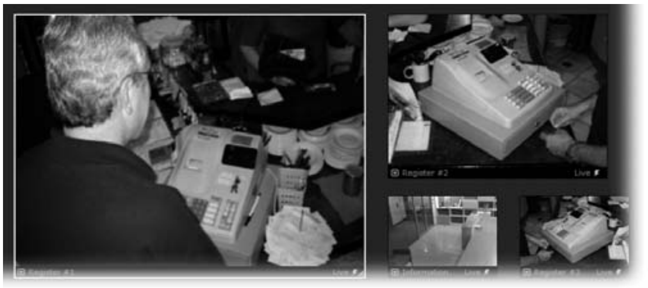
2. Move it to the position you want to display. When you release the mouse, the size and position are adjusted to match the layout frame.


Network Video Recorder VK-64 - Storage Server 1
File Edit View Help
Location
Shopping Mall
Zone
Checkout Area
Checkout Area
Informat... Register... Register... Level 1
Front Entrance and Carpark
Register #1
Live

To re-size the Video Window, click any corner and drag the image outwards to snap to a larger grid area. Release the mouse button. When you release the mouse, the size and position are adjusted to match the layout frame.

Create and align more Video Windows

Click and drag other camera thumbnails onto the Viewing Area to create Video Windows for monitoring, and resize the window. A layout example is shown to the right.

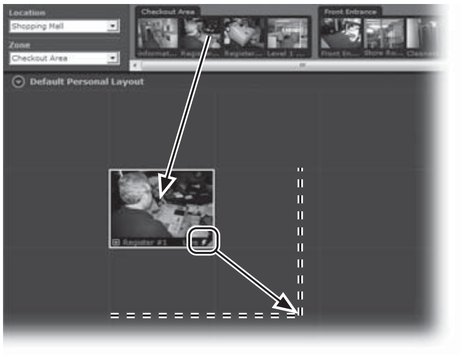

Register #2
Live
Register #1
Live

Small, Medium and Large Grids

When you select [**Small Grid**], [**Medium Grid**] or [**Large Grid**] from the [**Layout Grids**] sub-menu, the Viewing Area displays **cells** for Video Windows. These are boundaries indicating a uniform size which is used to display Video Windows in a tile-like manner.

Drag a camera thumbnail image into a blank tile

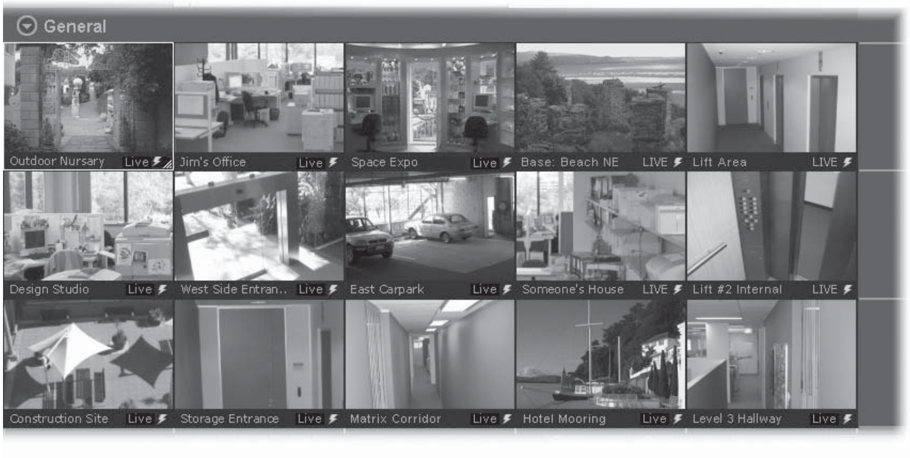
1. In the Camera Selection Area, click a thumbnail image and drag its selection boundary onto the Viewing Area grid.
2. Move it to the position you want to display. When you release the mouse, the size and position are adjusted to match the layout frame.


Location
Shopping Mall
Zone
Checkout Area
Checkout Area
Front Entrance
Default Personal Layout
Register #1

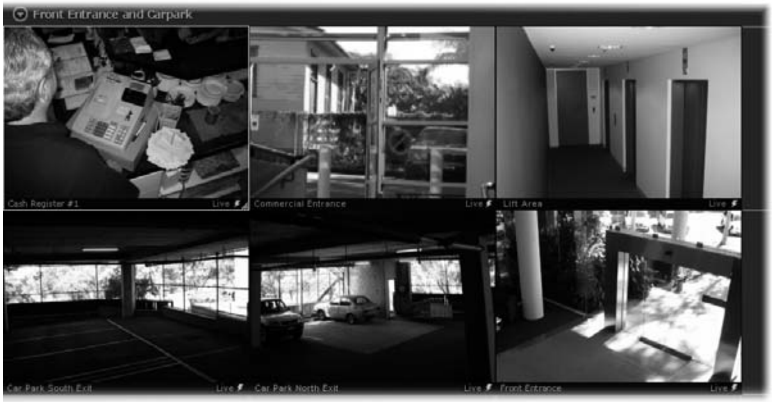
Tip

- The Layout menu is also available by right-clicking anywhere in the Viewing Area.
- A Video Window can be increased in size to take up a number of tiles, (for example 4 tiles, 9 tiles etc) so that Video Windows of different sizes/priorities can be viewed.
- The size of the image immediately after dragging it over the Viewing Area is fixed at 160x120.

The Viewing Area with a [**Small Grid**]


General
Outdoor Nursary Live
Jim's Office Live
Space Expo Live
Base: Beach NE LIVE
Lift Area LIVE
Design Studio Live
West Side Entran.. Live
East Carpark Live
Someone's House LIVE
Lift #2 Internal LIVE
Construction Site Live
Storage Entrance Live
Matrix Corridor Live
Hotel Mooring Live
Level 3 Hallway Live

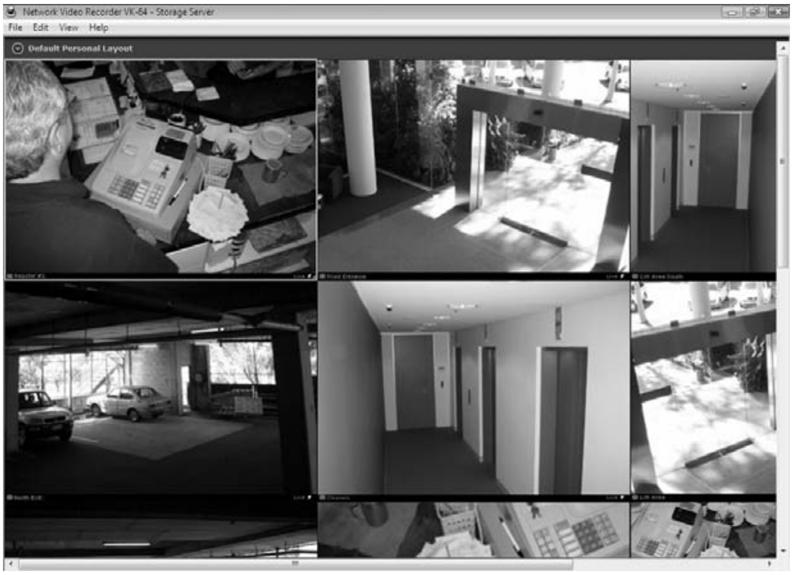
The Viewing Area with a [**Medium Grid**]


Front Entrance and Carpark
Cash Register #1 Live
Commercial Entrance Live
Lift Area Live
Car Park South Exit Live
Car Park North Exit Live
Front Entrance Live

Note

Although you can add more, the number of Video Windows you can display simultaneously will depend on your video card, the speed of your computer, the maximum frame rate (→ P. 5-16) configured with Viewer setting, the video size and video quality coming from the Camera Server and the size of each Video Window displayed. A maximum of 16 cameras is recommended in the Layout Area. If the number of video windows displaying MPEG-4 live video exceeds 20, a warning message will appear.

The Viewing Area with a [**Large Grid**]


Network Video Recorder VK-64 - Storage Server
File Edit View Help
Default Personal Layout

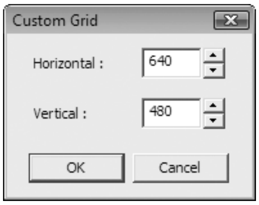
In this example, the Camera Selection Area and Timeline are hidden (→ P. 5-29).

■ Custom Grid

The Custom Grid fallows you to set customize a grid for displaying Video Windows.

Set a custom grid

1. Select [Custom Grid] from the [Layout Grids] sub-menu. The [Custom Grid] dialog appears. Values are given in pixels.
2. In the [Horizontal] or [Vertical] field, overwrite the existing value with a custom value, or use the up/down arrows to select a value. When you adjust the value in one field, you'll notice the value change in the other field. This is because the proportions of the re-sized Video Window are constrained and the dimensions are scaled accordingly.


Custom Grid
OK
Cancel

Horizontal : 640

Vertical : 480

3. Click [OK] to close the dialog. The grid will re-size to your new settings.

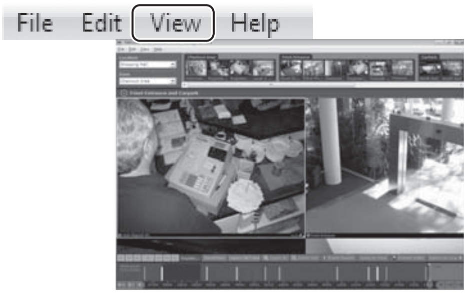
Note

Using Custom Grid may cause high CPU load.

Hide and Show Task Areas

The [View] menu allows you to show/hide task areas and other display elements in the Viewer. When you unselect [Camera Selector] and [Timeline] and then select [Fullscreen], the result is a large area in the Viewer for displaying more Video Windows as shown below in the Large Grid example. Pressing the [Esc] key returns the menu bar. You can also select to hide Video Window [Captions], the [Camera Control] and [Live Events].

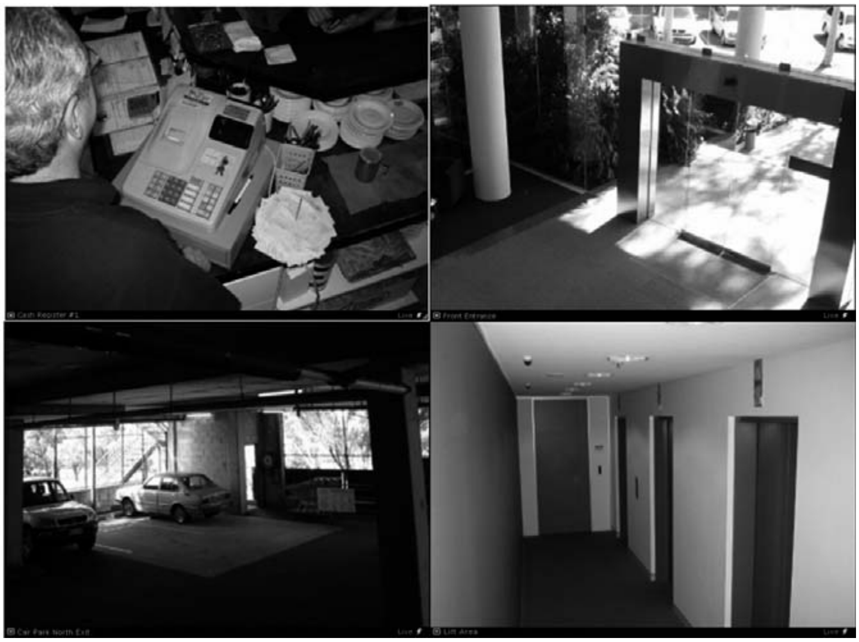
The number of Video Windows in the display achieved is dependent on the display resolution. A higher resolution will result in more Video Windows displayed.


File
Edit
View
Help

[View] → [Camera Selector]

[View] → [Timeline]

[View] → [Full-Screen] (Large grid, 1280x1024). Pressing the [ESC] key to display the task bar.


Cash Register #1
Live
Front Entrance
Live
Car Park North Exit
Live
Lift Area
Live

Basic Video Window Functions

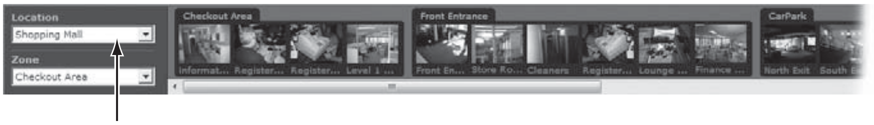
This section shows you how to create Video Windows for viewing in the Viewing Area and how to adjust camera angles.

Select Cameras for Viewing

■ Camera Selection Area

The Camera Selection Area is used to display thumbnails of all the cameras. You can select another set of thumbnails of currently-available cameras via the [**Location**] and [**Zone**] drop-down menus and then place them into the Viewing Area as Video Windows.

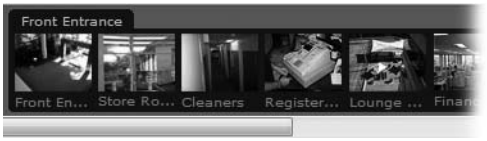
- The [**Location**] drop-down menu lists the physical locations of cameras on the system.
- The [**Zone**] drop-down menu lists the groups of areas within each location.


Location
Shopping Mall
Zone
Checkout Area
Checkout Area
Informat...
Register...
Register...
Level 1 ...
Front Entrance
Front En...
Store Ro...
Cleaners
Register...
Lounge ...
Finance ...
CarPark
North Exit
South E

When you select a location, its associated zones will be listed below.

■ Camera Thumbnails

When a Location is selected, the thumbnail images of the Camera Servers registered in that Location will appear. Depending on the number of cameras in the selected Location, a scrollbar at the base of the Camera Selection Area can be used to scroll the display of thumbnails.


Front Entrance
Front En...
Store Ro...
Cleaners
Register...
Lounge ...
Finan

Each Zone is grouped into camera thumbnail images and these can be dragged onto the Viewing Area to create Video Windows.

Tip

You can hide the Camera Selection Area. From the [**View**] menu, select [**Camera Selector**] to hide/show the Camera Selection Area.

■ Locations and the Zones

Selection is performed in the following order:

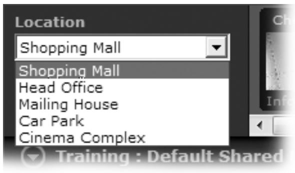
1		2		3
Select a Location	→	Select a Zone in that Location	→	Click and drag thumbnails to view live video

Step 1: Select a Location from the drop-down menu

Click the [**Location**] drop-down menu or on the down arrow.

A list of pre-configured locations appears.

Click a location in the list. Zones for that list will appear in the thumbnail section to the right.


Location
Shopping Mall
Shopping Mall
Head Office
Mailing House
Car Park
Cinema Complex
Training : Default Shared

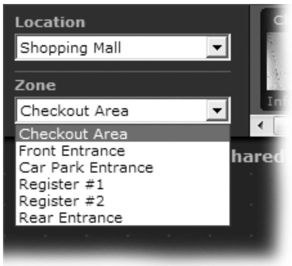
Step 2: Select a Zone from the menu or thumbnail folder region

Click the [**Zone**] drop-down menu or on the down arrow.

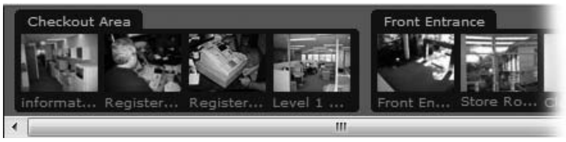
A list of pre-configured zones appears.

Click a zone in the list.

Once a Zone is selected from the drop-down menu, the Camera Selection Area for the selected Zone moves to the left.


Location
Shopping Mall
Zone
Checkout Area
Checkout Area
Front Entrance
Car Park Entrance
Register #1
Register #2
Rear Entrance

Alternatively, click the scrollbar located under the Camera Selection Area. Drag it to the right until the desired Zone is displayed.


Checkout Area
informat...
Register...
Register...
Level 1 ...
Front Entrance
Front En...
Store Ro...

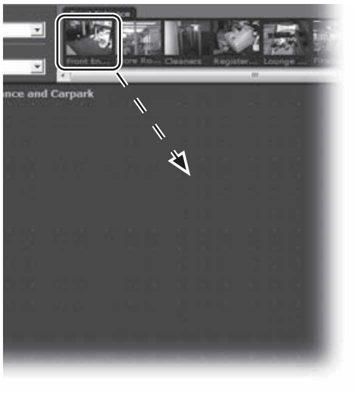
Basic Video Window Functions

■ Create, scale and move Video Windows

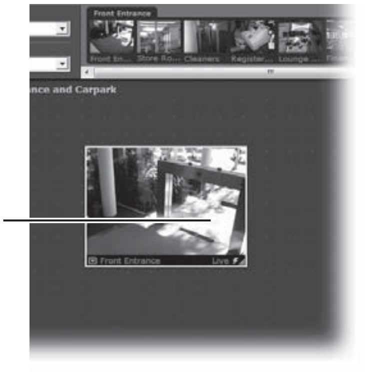
Once you have chosen a location and chosen a zone, you are ready to view one or more cameras in that zone. Camera thumbnail images are used to create Video Windows in the Viewing Area. The Viewing Area can support multiple Video Windows for live monitoring and viewing recorded video simultaneously.

Click and drag a camera thumbnail onto the Viewing Area

1. Click the thumbnail image and, while holding down the mouse button, drag its boundary anywhere onto the Viewing Area.
2. Release the mouse button. The re-sized outline becomes a live Video Window.


Front En...
Store Ro...
Cleaners
Register...
Lounge ...
nce and Carpark

When placed, the Video Window is re-sized according to the [Layout Grid].


Front Entrance
Front En...
Store Ro...
Cleaners
Register...
Lounge ...
nce and Carpark
Front Entrance
Live

A selected Video Window is highlighted.

Note

An error message will appear if an error occurs in video windows. See P. 9-9 for details.

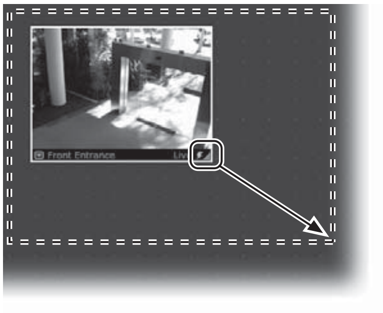
Re-size a Video Window

1. Click a Video Window to highlight it. An arrow icon will appear in the lower right corner. Click the arrow icon and drag outwards. You can also click on the other corners and drag to re-size the window.

   Release the mouse button when you have reached the desired size.

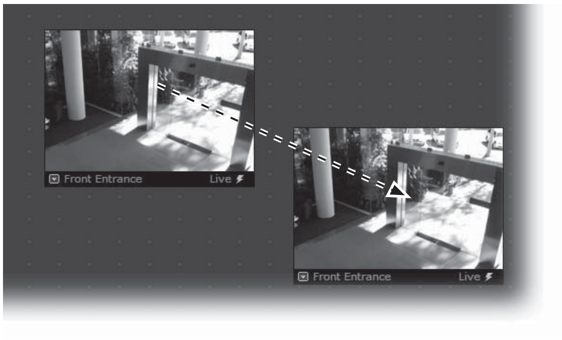
2. Alternatively, click the Video Window menu button and select [Video Display Size]. Select [Small], [Medium], [Large], or [Default] from the sub-menu. The same menu is available by right-clicking the view window.

   A right-click action on the Video Window will also bring up the same menu.



Move a Video Window

Click anywhere on a Video Window and drag it to any position in the Viewing Area.

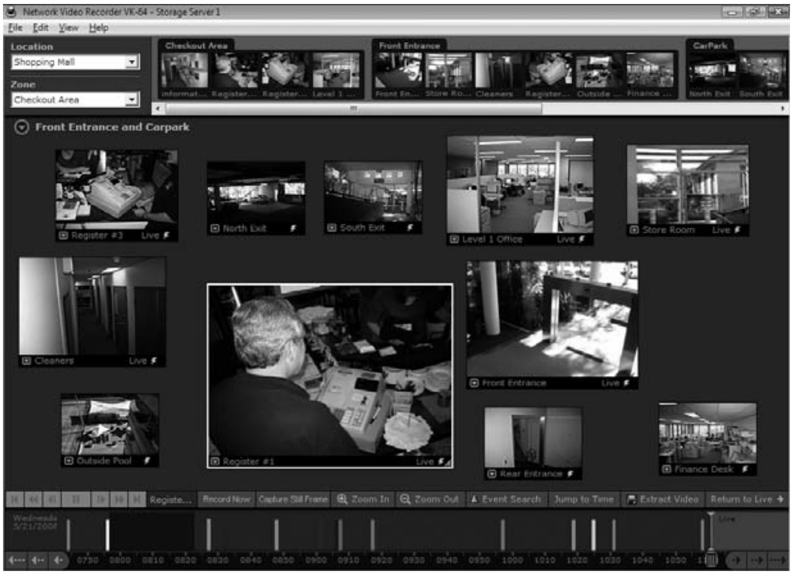


Note

When Video Windows that are other than a standard resolution (160x120, 320x240, 640x480) are displayed, the load on the computer CPU will be high and Viewer operations may take longer.

Add more Video Windows

Click and drag other camera thumbnails onto the Viewing Area to create Video Windows for monitoring if necessary. Your Viewing Screen could look like this.



Location: Shopping Mall

Zone: Checkout Area

Network Video Recorder VK-64 - Storage Server 1
File Edit View Help
Checkout Area
Informat... Register... Register... Level 1 ...
Front Entrance
Front En... Store Ro... Cleaners Register... Outside ... Finance ...
CarPark
North Exit South Exit
Front Entrance and Carpark
Register #3 Live
North Exit
South Exit
Level 1 Office Live
Store Room Live
Cleaners Live
Front Entrance Live
Register #1 Live
Outside Pool
Rear Entrance
Finance Desk
Registe...
Record Now
Capture Still Frame
Zoom In
Zoom Out
Event Search
Jump to Time
Extract Video
Return to Live
Wednesda
5/21/2008
Live
0750 0800 0810 0820 0830 0840 0850 0900 0910 0920 0930 0940 0950 1000 1010 1020 1030 1040 1050

Arrange Video Windows

There are various ways you can manage the layout of Video Windows in the Viewing Area (→ P. 5-26).

Note

- In the Viewer, the number of Video Windows you can display simultaneously will depend on your video card, the resolution and quality settings of the camera and the Live Video Viewing Settings (frame rate) set in the [**Viewer Settings**] window of the [**Configuration and Preferences**] screen.
- If the load on the computer CPU is high, Viewer operations may take longer.

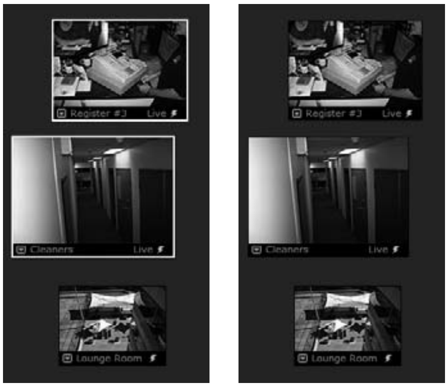
■ Select Multiple Video Windows

You can select multiple video windows easily. You can also move, cut, or copy selected multiple windows simultaneously.

Select Multiple Video Windows

There are three ways to select multiple windows:

- On your keyboard, hold down the [**Ctrl**] key and click each Video Window to select them, or.
- Click outside the Video Windows and drag a selection box around the Video Windows you want selected, as shown below. Only windows contained within the selection box are selected. Dragging around part of an image in the selection box will not select it.
- If you wish to select all Video Windows, click [**Select All**] from the [**Edit**] menu (or on your keyboard press [**Ctrl**] + [**A**]).



Tip

- Video Windows from different zones and locations can be displayed in the same Layout.
- You can copy and paste a multiple selection of Video Windows at one time which can be pasted into and saved as a new Layout

Video Window Status

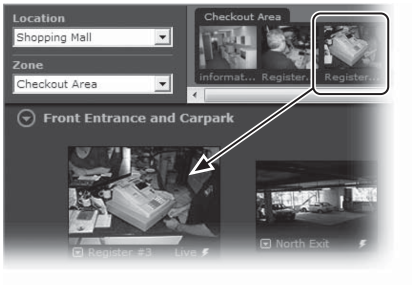
■ Video Window Properties:

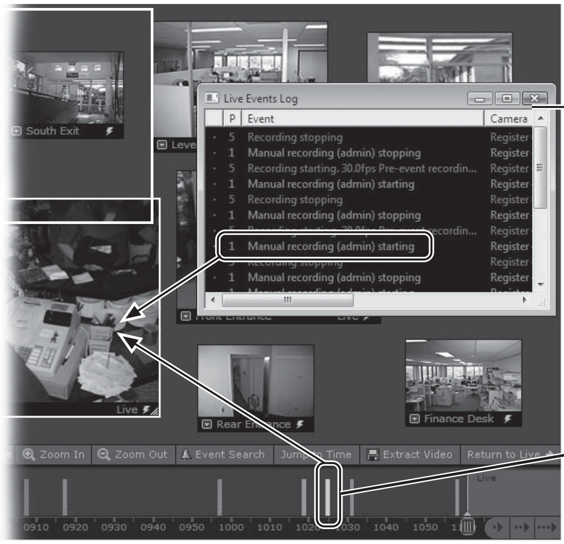
- **Title bar** - indicates name of camera, live or recorded video viewing.
- **Video display** - displays live or recorded video.
- **Recorded video indicator** - displays a time/date stamp in the title bar for recorded footage.
- **Event indicator** - displays a colored bar across the top of the Video Window.
- **Pan, tilt and zoom controls** - when the Video Window is double-clicked or the Video Window menu item, [**Get Camera Control**] is selected, controls appear to enable pan, tilt and zoom.

■ Video Window states

Video Windows can be displayed in the Viewing Area according to their conditions:

- **Live** - Displays live video from a Camera Server.
- **Recorded** - Displays recorded video from a Storage Server.


Location
Shopping Mall
Zone
Checkout Area
Checkout Area
informat...
Register...
Register...
Front Entrance and Carpark
Register #3
Live
North Exit


South Exit
Leve
Front Entrance
Live
Rear Entrance
Finance Desk
Zoom In
Zoom Out
Event Search
Jump to Time
Extract Video
Return to Live
Live
0910
0920
0930
0940
0950
1000
1010
1020
1030
1040
1050

Live Events Log

	P	Event	Camera
·	5	Recording stopping	Register
·	1	Manual recording (admin) stopping	Register
·	5	Recording starting. 30.0fps Pre-event recordin...	Register
·	1	Manual recording (admin) starting	Register
·	5	Recording stopping	Register
·	1	Manual recording (admin) stopping	Register
·	5	Recording starting. 30.0fps Pre-event recordin...	Register
·	1	Manual recording (admin) starting	Register
·	5	Recording stopping	Register
·	1	Manual recording (admin) stopping	Register

[**Live Events Log**] list

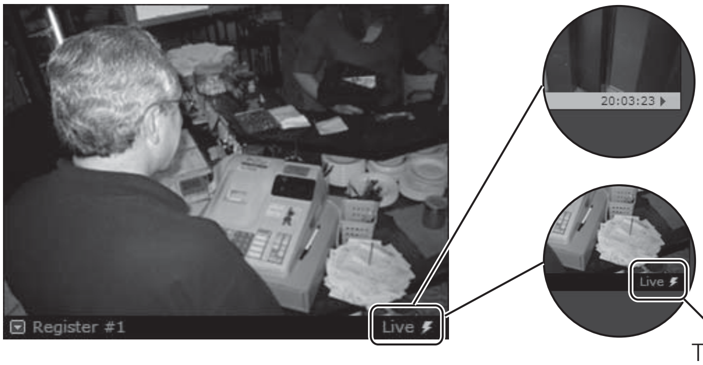
Double-click an event to view it in the corresponding Video Window. The [**Live Events Log**] opens automatically when you launch the Viewer, if left open in a previous session.

Recorded Events

Click to view recorded footage in the corresponding Video Window.

Each Video Window displays video from an individual camera. Video Windows can be re-sized, repositioned or closed.

- **Title bar** - The title bar consists of menu, camera name and live or recorded status.
- Video display conditions



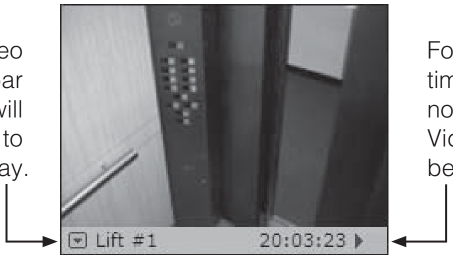
Recorded video, Playback

Live video

The lightning symbol ⚡ in the lower right-hand corner indicates live video.

- Recorded Video Indicator

When recorded video is shown, the title bar on a Video Window will change from black to gray.



For recorded video, the time/date indicator may not fully display if the Video Window size has been reduced.

- Event Indicator

If the option for [**Operator Notification**] has been set, a color bar will flash on top of a live Video Window when an event occurs. The color indicates the event priority. The bar will flash for a pre-defined time and then remain steady for one minute until disappearing. An audio alert may also sound if pre-defined.

Color	Priority
Red	Highest
Orange	High
Yellow	Medium
Light Green	Low
Dark Green	Lowest

Level 1 Office
Live

Pan, Tilt, Zoom Control

This is done in one of three ways:

- Directly from within the Video Window
- Using the Camera Control Panel
- Selecting a Preset

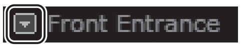
Note

- For VB-C500D, VB-C50FSi and VB-C50Fi, Pan and Tilt are not available. You cannot use zoom operations with the VB-C500D if digital zoom is set to [Disable] on the camera.
- If a fixed camera or an external camera such as VC-C50i is connected to VB-C50i, you cannot use pan, tilt, and zoom operations.

Using the Camera Directly from within the Video Window

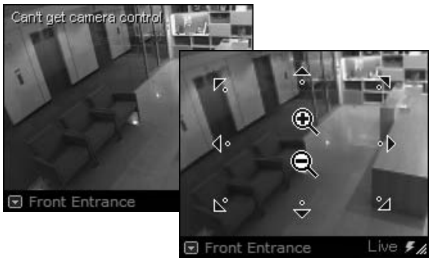
Enable the controls by double-clicking on a live Video Window.

Alternatively, click the down-arrow at the base of the Video Window (or right-click on the window). A drop-down menu will appear. Select [Get Camera Control].



If the camera is being used by the Viewers or another VB Administration Tools associated with the Camera Server, a "Can't get camera control" message will appear. You may have to wait a few moments and attempt to get control later.

Arrows will appear in the cursor position when you have gained control of the camera. When you move the mouse cursor over a Video Window, the mouse cursor changes its shape. Click and drag the cursor in the direction of the arrow for pan and tilt. When you move the mouse cursor to the center of the image, a zoom in or zoom out control will appear.


Can't get camera control

Hold down the mouse on "+" to zoom in.
Hold down the mouse on "-" to zoom out.

When you have finished, select [Release Camera Control] from the Video Window menu.

Tip

- If you have camera control, you can only drag the window by clicking and holding the title bar.
- If you did not make any control for 30 seconds, the message of "Control will be lost in 10 seconds" appears, and a 10-second countdown will start.
- You can still manipulate a camera that is currently recording. If the recording position has been set, the Camera Server will return to that position after the Viewer release camera control.

Using the Camera Control Panel

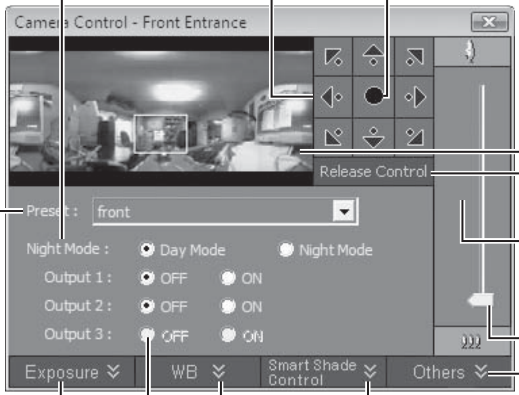
To display, select [**View**] > [**Camera Control**] from the menu bar, or click the Video window menu icon (or right-click in the Video Window) to bring up a context menu and select [**Camera Control**].

If a Video Window is not selected, the preview window will be blank. Click on a Video Window to control the camera.

Set Night Mode.

Pan/Tilt controls. Click to nudge or click and hold for continuous movement.

Clicking this button returns the camera to face the front.



Preset : front

Night Mode : ● Day Mode ○ Night Mode

Output 1 : ● OFF ○ ON

Output 2 : ● OFF ○ ON

Output 3 : ● OFF ○ ON

You can control the pan, tilt, and zoom operation using a panorama image. Click inside the Panorama window to adjust the pan and tile angles so that the clicked position becomes the center of the image. Alternatively, you can move or zoom in/out the yellow scope to perform the pan, tilt, and zoom operation.

When the Video Window is selected, click [**Get Control**]. Click [**Release Control**] when finished.

If the digital zoom is enabled by the Camera Server, a boundary between the optical and digital zoom is displayed.

Click and drag the Zoom slider to perform the zoom operation.

Click this button to display extended camera control panel (→ P. 5-42).

Click this button to display exposure control (→ P. 5-40).

Click this button to display white balance control (→ P. 5-41).

Click this button to display the smart shade correction controls at the bottom of the panel.

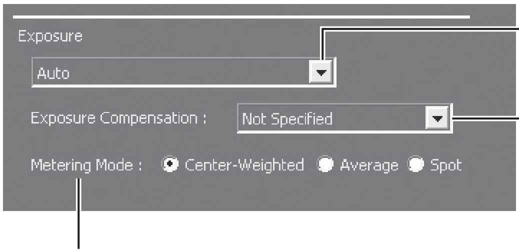
Switch On and Off of external device output of the camera.

If preset camera angles have been set up by your Administrator, they will be available from a drop-down menu.

Note

- When using the VB-C500D/VB-C60/VB-C300, you cannot use Night Mode in the following cases:
  - When [**Day/Night**] is set to [**Auto**] on the [**Camera Settings**] page
  - When the [Night Mode] is set to [**Auto**] with a recording schedule
- Panorama picture needs to be set on the Camera Server in advance. VB-C500D/VB-C50FSi/VB-C50Fi cannot display panorama picture.

Exposure Control Items (when the Exposure Mode is Auto)


Exposure
Auto
Exposure Compensation :
Not Specified
Metering Mode :
● Center-Weighted
○ Average
○ Spot

Set the Exposure Mode to [**Auto**]
(VB-C500D, VB-C60, VB-C300).

[**Auto**]: Automatically adjusts the exposure.

[**Auto (Flicker less)**]:
This mode is only for the VB-C500D and VB-C60. See the Users Manual of the camera for details.

[**Auto (shutter priority)**]:
Allows the value of the shutter speed to be specified.

Selects the Metering Mode
(VB-C500D/VB-C60).
See the Users Manual of the camera for details.

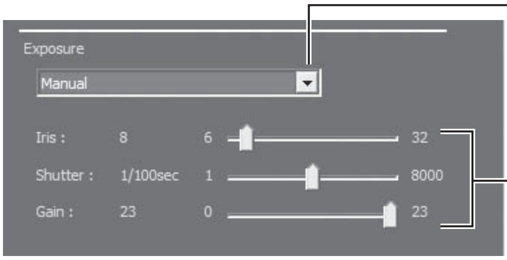
Selects the Exposure Compensation value.
(VB-C300, VB-C50i series)

[**Off**]:	Exposure compensation is off.
[**Low**]:	Performs a low level of exposure compensation.
[**Medium**]:	Performs a medium level of exposure compensation.
[**High**]:	Performs a high level ofexposure compensation.

Note

- Exposure can be adjusted for VB-C500D, VB-C60 and VB-C300.
- For VB-C500D and VB-C60, the values of exposure compensation are -3, -2, -1, 0, +1, +2, +3.
- The [**Metering Mode**] is available for VB-C500D and VB-C60. The mode is deactivated when using other models.

Exposure Control Items (when the Exposure Mode is Manual)

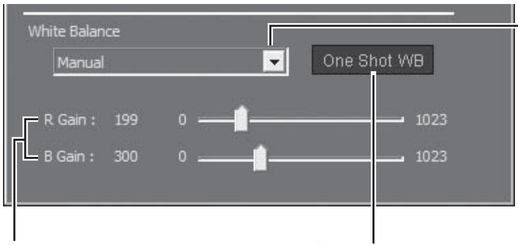

Exposure
Manual
Iris : 8 6 32
Shutter : 1/100sec 1 8000
Gain : 23 0 23

Set the Exposure Mode to [**Manual**]
(VB-C500D, VB-C300, VB-C60).

[**Manual**] : Dragging slide bars adjust the aperture value, shutter speed, and gain value.
(Aperture is not available for the VB-C500D).

Drag each slide bar to adjust the aperture value, shutter speed, or gain value.

White Balance Control Items



White Balance

Manual

R Gain : 199

B Gain : 300

Drag each slide bar to adjust each gain value.

To forcibly adjust the white balance, capture a white object (e.g., a piece of white paper) and click [One-Shot WB].

Select the White Balance mode from the drop-down menu. The following modes are available (VB-C500D, VB-C60, VB-C300).

[Auto]: Automatically adjusts the white balance.

[fluorescent H] (VB-C300) or
[Daylight Fluorescent] (VB-C500D, VB-C60):
Select this option when day-light fluorescent lamp.

[fluorescent] (VB-C300) or
[White Fluorescent] (VB-C500D, VB-C60):
Select this option when using the camera under a day-light or white fluorescent lamp.

[Warm Fluorescent]:
Select when shooting under warm-color fluorescent lights.

[Mercury lamp]:
Select this option when using the camera under a mercury lamp.

[Sodium lamp]:
Select this option when using the camera under orange-colored sodium-vapor lamp.

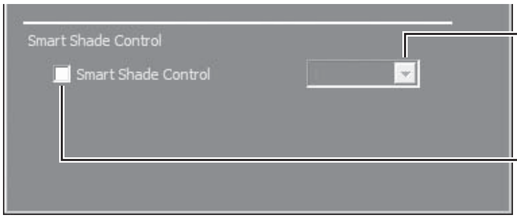
[Halogen lamp]:
Select this option when using the camera under a halogen or incandescent lamp.

[Manual]: Drag each slide bar to adjust the parameter (R or B gain).

Note

White Balance control is available with VB-C500D, VB-C60 and VB-C300 only.

Smart Shade Control


Smart Shade Control
☐ Smart Shade Control

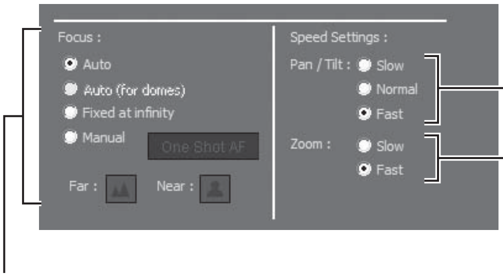
Select the Smart Shade Control level between 1 (weakest) and 7 (strongest).

Tick to activate the Smart Shade Control function (VB-C500D and VB-C60).

Note

The Smart Shade Control function is available for VB-C500D and VB-C60.

Other items


Focus :
● Auto
○ Auto (for domes)
○ Fixed at infinity
○ Manual
One Shot AF
Far :
Near :
Speed Settings :
Pan / Tilt :
○ Slow
○ Normal
● Fast
Zoom :
○ Slow
● Fast

Select from [Fast], [Normal], and [Slow] for [Pan / Tilt].

Select from [Fast] and [Slow] for [Zoom].

Switch between Auto Focus and Manual Focus.

[Auto]: Adjust the focus automatically.

[Auto (for domes)]:
When the optional dome housing is used, select this option to automatically adjust the focus without focusing on the wall surface.

[Fixed at infinity]:
Focus is fixed at a point of infinity.

[Manual]: Press and hold [Far] or [Near] button to adjust the focus. Clicking [One Shot AF] adjusts the focus just once automatically (VB-C60, VB-C300).

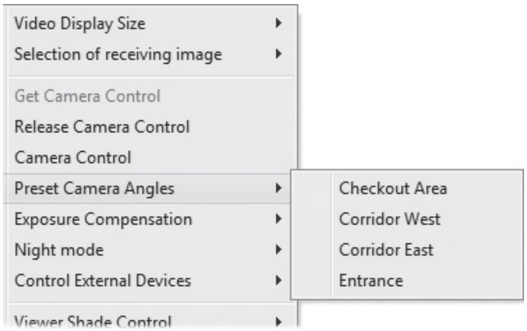
Note

- Focus is not available for the VB-C500D.
- [Auto (for domes)] is not available for VB-C500D/VB-C60.
- [Pan / Tilt] speed cannot be changed for VB-C500D. Additionally, [Zoom] speed cannot be changed if digital zoom is set to [Disable].

Select a Preset Camera Angle

If preset camera angles have been set up and stored as presets, they will be available from the [Preset] drop-down menu of the Camera Control panel or a sub-menu. The following explains how to select a preset from a sub-menu.

1. Double-click a Video Window or select [Get Camera Control] from the Video Window menu.
2. From the Video Window menu, click [Preset Camera Angles].
3. Select a preset position from the sub-menu.


Video Display Size
Selection of receiving image
Get Camera Control
Release Camera Control
Camera Control
Preset Camera Angles
Exposure Compensation
Night mode
Control External Devices
Viewer Shade Control
Checkout Area
Corridor West
Corridor East
Entrance

Other Video Window Functions

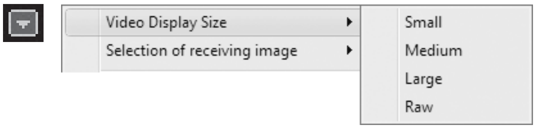
■ Change the Video Window size

Apart from manually clicking on the corner and dragging out the Video Window to a new size, you can also select a set size from the Video Window menu.

To change the display size of a Video Window via the menu:

Open the Video Window menu and select [Video Display Size].

1. Click the Video window menu icon, or right-click in the Video Window to bring up a context menu.
2. Select [Video Display Size] from the menu, and then select [Small], [Medium], [Large], or [Raw] from the sub-menu. A [Raw] selection displays the Video Window selected at the [Selection of receiving image].


Video Display Size
Selection of receiving image
Small
Medium
Large
Raw

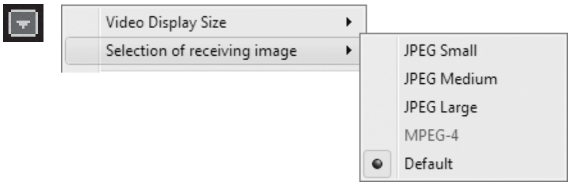
■ Change the Received Video size (VB-C500D, VB-C60, VB-C50i/VB-C50iR, VB-C50FSi, VB-C50Fi only)

You can select a video size received by the Viewer. To change the size of received video via the menu.

Open the Video Window menu and select [Selection of receiving image].

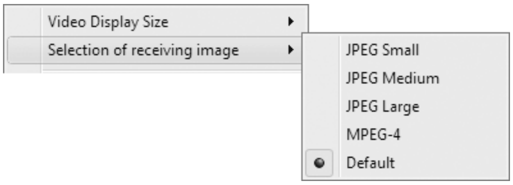
1. Click the Video window menu icon, or right-click in the Video Window to bring up a context menu.
2. Select [Selection of receiving image] from the menu, and then select [JPEG Small], [JPEG Medium], [JPEG Large], or [Default] from the sub-menu.

   Selecting [**Default**] displays the Video Window in the size received from the Camera Server.


Video Display Size
Selection of receiving image
JPEG Small
JPEG Medium
JPEG Large
MPEG-4
● Default

Note

- If you are using the VB-C500D/VB-C60, the menu items are as follows.


Video Display Size
Selection of receiving image
JPEG Small
JPEG Medium
JPEG Large
MPEG-4
● Default

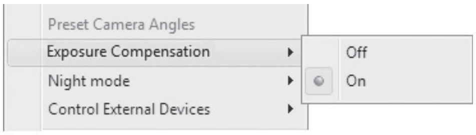
- The [**MPEG-4**] setting can be made on VB-C500D/VB-C60.
- If you specify MPEG-4 and perform live viewing on VB-C500D/VB-C60, the video and audio are not synchronized.
- When multiple Video Windows from a single Camera Server are displayed and the Video Receive Size is changed from one of them, the change will apply to all Video Windows.
- Selected video receive sizes are saved when the layout is saved.
- The [**Video Receive Size**] used for [**Default**] is determined when first displaying video from the Camera Server starts. Even if you change the size from the Camera Server after the connection is made, it will not apply.

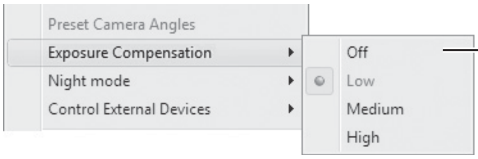
■ Enable Exposure Compensation

Exposure compensation is to compensate for camera views with strong backlighting. It can be enabled from the Video Window menu.

While Camera Control is active, select [Exposure Compensation].

1. Click menu bar of the Video window, or right-click in the Video Window to bring up a context menu.
2. Select [Exposure Compensation] from the menu and select [Off], or [On] from the sub-menu.


Preset Camera Angles
Exposure Compensation
Night mode
Control External Devices
Off
On


Preset Camera Angles
Exposure Compensation
Night mode
Control External Devices
Off
Low
Medium
High

You can set the exposure compensation to [Off], [Low], [Medium] or [High] for VB-C300, VB-C50i / VB-C50iR, VB-C50FSi and VB-C50Fi.

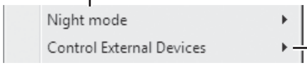
If you are using VB-C500D/VB-C60, the options are -3, -2, -1, 0, +1, +2, and +3.

Note

- ● A checkmark (black circle) is attached to the selected item. However, it is not displayed in front of the control.
- ● Choose "0" to disable Exposure Compensation.

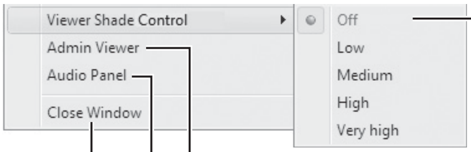
■ Other Menu Options

Other functions available from the Video Window menu include:



Click [**Night mode**] and select [**Disabled**], [**Enabled**], [**IR light off**], or [**Enabled**], [**IR light on**] from the sub-menu.
Selecting [**Enabled**], [**IR light on**] will remove the IR cut filter and turn the built-in IR light on. The IR light cannot be used with the VB-C500D, VB-C60, VB-C300, VB-C50FSi, or VB-C50Fi.

Click [**Control External Devices**] to control any external devices that may be connected to your Camera Server.
This is only enabled when you have camera control.



Click [**Viewer Shade Control**] to correct shaded areas in the video window. It is available to one specified vide window only. Details are explained in the next page.

Admin Viewer starts up by clicking [**Admin Viewer**] if the Admin Viewer or NC Viewer is already installed. For VB-C300, the NC Viewer starts up. For VB-C500D and VB-C60, Internet Explorer starts up and the top page is diaplayed. See your camera server's user's manual for more information on the Admin Viewer or NC Viewer.

To use the audio function of VB-C500D, VB-C60, VB-C300, VB-C50i/iR, or VB-C50FSi, click this menu to see the Audio Panel (→ P. 5-47). Please see the user's manuals that come with VB-C500D, VB-C60, VB-C300, VB-C50i/VB-C50iR, and VB-C50FSi for more information on audio settings.

Click [**Close Window**] to close the Video Window that is currently selected. You can also close a selected Video Window by pressing the Delete key.

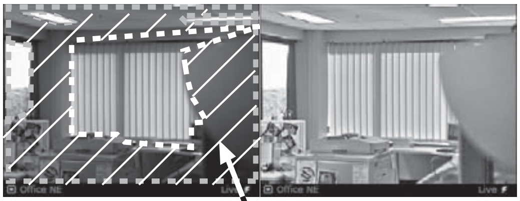
Note

- It is recommended to install the Viewer and/or NC Viewer in advance.
- The camera server which is sending or receiving audio cannot interact with other Viewer or Admin Viewers.
- Viewer Shade Control cannot be applied to multiple Video Windows.
- Viewer Shade Control is performed by using image processing within the Viewer and not on the Camera Server. It can be used on live or recorded video (see below).

■ Viewer Shade Control

Viewer Shade Control compensates darker regions of images and makes them lighter.

Correction only applies to the displayed Video Window in the Viewer.

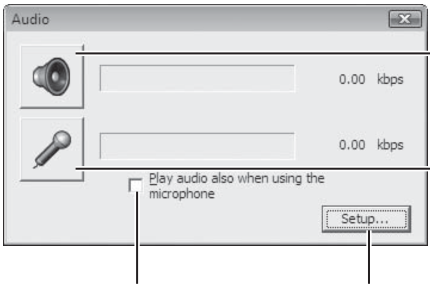

Office NE
Live
Office NE
Live

Viewer Shade Control [Off]

Viewer Shade Control [High]

Darker regions are most affected by Viewer Shade Control.

■ Audio Panel

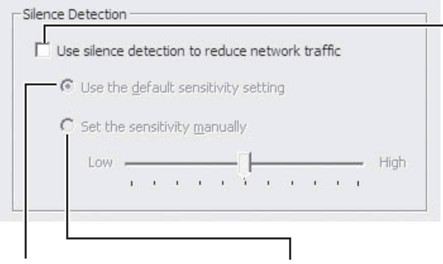

Audio
0.00 kbps
0.00 kbps
Play audio also when using the microphone
Setup...

Clicking this button after selecting a Video Window, or selecting a Video Window after clicking this button starts audio playback.

Clicking this button after selecting a VideoWindow, or selecting a Video Window after clicking this button starts audio transmission.

When ticked, audio is played back even when a microphone is used.

Click this button to display silent detection control.


Silence Detection
Use silence detection to reduce network traffic
Use the default sensitivity setting
Set the sensitivity manually
Low
High

When ticked, silent interval is detected while transmitting audio. For a silent interval, network load can be mitigated by reducing data to transmit.

Tick this option to detect silent intervals with predefined sensitivity.

Tick this option to manually specify the detection sensitivity. Drag the slide bar to adjust the detection sensitivity.

Note

- You cannot transmit and receive audio when using a proxy server.
- Audio playback is only performed during regular playback.
  Audio playback is not performed in the following cases.
  If multiple image windows are selected.
  While paused, or during fast forward, nudge forward, nudge back, or rewind

Use Timeline and View Events

This chapter shows you how to use the Timeline for live and recorded viewing as well as view and search events.

■ Timeline Overview

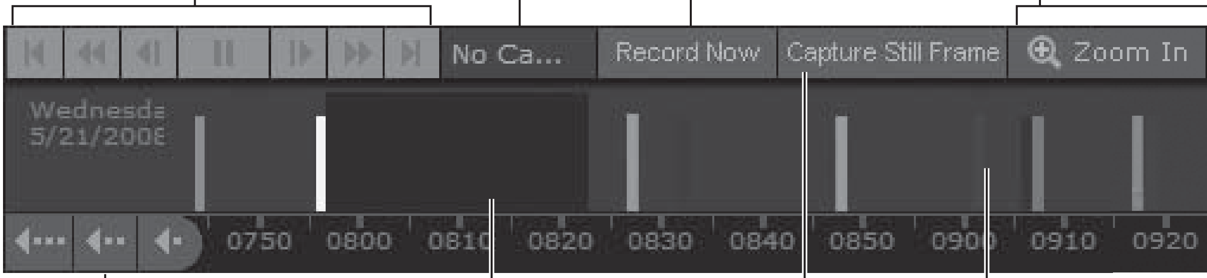
On the Viewing Screen, a timeline of past events associated with displayed cameras is shown in the Timeline Area at the bottom of the Viewer as colored bars. Selecting a colored bar moves the playhead to the event and the associated Video Window is switched to playback mode.

Playback controls. Buttons for playback, rewind, etc.

Camera Server name The name of the camera currently selected.

A manual recording with duration of one minute is initiated.

Zoom in or out of the Timeline to see events in more or less detail.



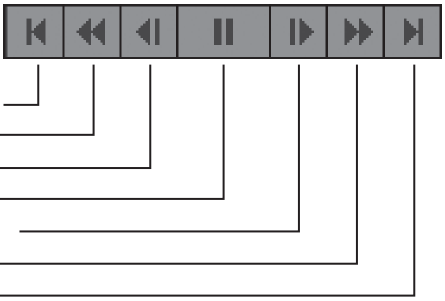
Scroll forward by hours, by days or by weeks.

Darker areas indicate recorded video for this period.

You can save the current image on a Video Window in a file.

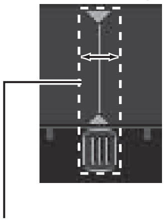
Events for non-selected cameras (Video Windows) in the Viewing Area are called "secondary event." They are displayed in weaker colors than primary events.

Playback controls



Previous Event
Rewind
Nudge Back
Play/Pause
Nudge Forward
Fast Forward
Next Event

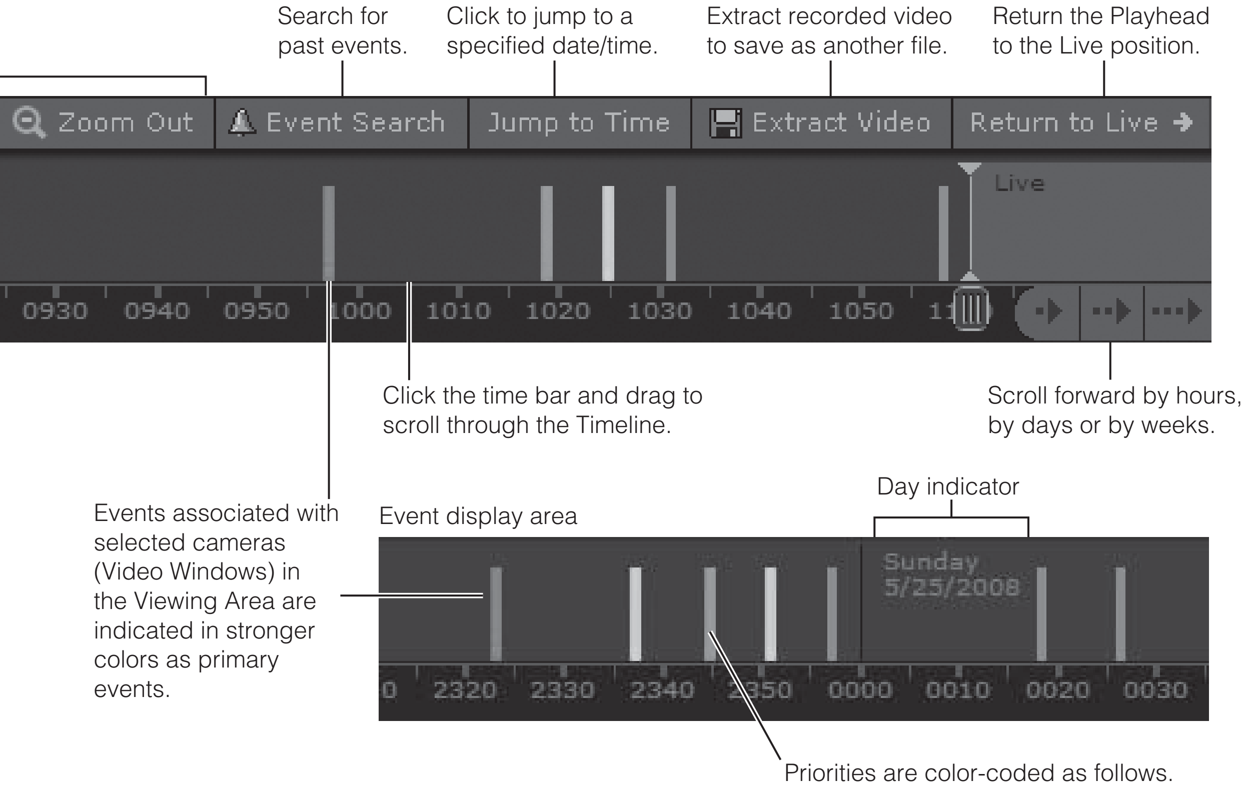
Playhead region



Click in this area of the Playhead shaft and drag to positions on the Timeline.

■ Monitor Live Video in relation to the Timeline

When a Video Window is created from a camera thumbnail, video is seen live. The Playhead (shown below) will be in a **live** position. The **live** position represents the present time. The playhead remain fixed as time scrolls to the left underneath, representing the passage of real time.


Search for past events.
Click to jump to a specified date/time.
Extract recorded video to save as another file.
Return the Playhead to the Live position.
Zoom Out
Event Search
Jump to Time
Extract Video
Return to Live
Live
0930
0940
0950
1000
1010
1020
1030
1040
1050
Click the time bar and drag to scroll through the Timeline.
Scroll forward by hours, by days or by weeks.
Events associated with selected cameras (Video Windows) in the Viewing Area are indicated in stronger colors as primary events.
Event display area
Day indicator
Sunday 5/25/2008
2320
2330
2340
2350
0000
0010
0020
0030

Priorities are color-coded as follows.

Color	Priority
Red	Highest
Orange	High
Yellow	Medium
Light Green	Low
Dark Green	Lowest

Note

When there is no camera selected, all events are shown as primary events.

Tip

You can hide the timeline by de-selecting [**Timeline**] from the [**View**] menu.

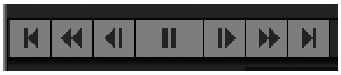
■ Use the Timeline to play and extract video

You can view recorded video by moving the playhead control in the Timeline or entering a timecode and jumping to it. Methods include:

Use the Playback Controls

You can control to play, rewind, fast forward or jump to previous and next events.

The fast forward and rewind speeds change by 1x, 2x, 5x and 10x each time you click the buttons.



Note

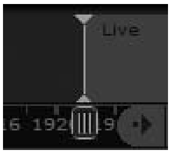
- Rewind and nudge back cannot be performed on video recorded in MPEG-4 format.
- The fast forward speed of video recorded in MPEG-4 format is fixed at 2 times.
- If a schedule that had previously been recording in MPEG-4 format is switched to recording in JPEG format, when rewind playback from the JPEG format time range enters the MPEG-4 time range, although the rewind playback continues, the video is not displayed and an error stating "No Recorded Video." is displayed.

Tip

- You can simultaneously play videos from multiple camera servers at the same time.
- You can simultaneously play multiple videos from one camera server, which were captured at different times.

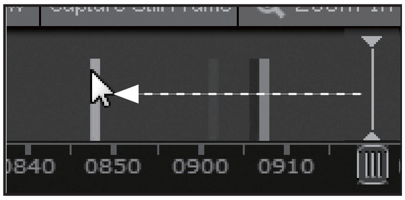
Drag the Playhead to a new time

Click and drag the Playhead shaft to another location. When you move the Playhead, you are effectively controlling all Video Windows that have been selected.



Click in the Event Display Area of the Timeline

Click in the Event Display Area of the Timeline. The Playhead will move to that location and playback of recorded video commences from that time.

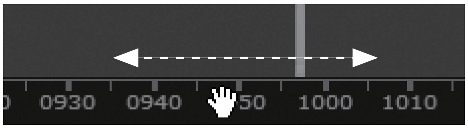


Note

- When you choose to play back video, the video is played. The response and smoothness of the play back may depend on network traffic and other properties of the network.
- The time displayed on the Timeline is the time of PC where the Viewer is running.

Click and drag the time bar to move through the Timeline

Move your mouse pointer over the time bar and it becomes a hand. Click and drag to the left or right to move back or forward in time. You can only scroll right to the current time, or **live** time.



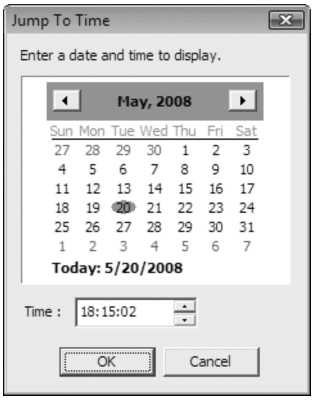
Jump to time entered

1. Select a Video Window and click [Jump to Time].

Jump to Time

2. The [Jump to Time] dialog opens. Select a day and/or time.
3. Click [OK].

   The Playhead and Timeline will move to the time selected. If no Video Windows are selected, only the timeline is moved.



Enter a date and time to display.

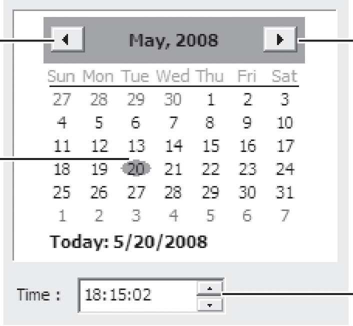
May, 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
1	2	3	4	5	6	7

Today: 5/20/2008

Time : 18:15:02

Using the calendar is shown below.

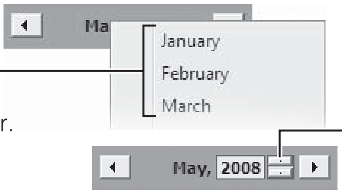

May, 2008
Sun Mon Tue Wed Thu Fri Sat
27 28 29 30 1 2 3
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31
1 2 3 4 5 6 7
Today: 5/20/2008
Time : 18:15:02

Click to scroll back to the previous month.

Click to scroll forward to the next month.

Click a day to highlight it, then click [OK] to bring up that day in the Timeline.

Click up/down arrows to select a time or click each time segment and overwrite existing value.


Ma
January
February
March
May, 2008

Alternatively, click the current month and a month selector will appear.

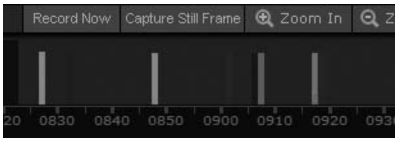
To select another year, click the current year and scroll down or back up, using the up/down arrows.

■ One-minute manual recording (Record Now)

A manual recording with duration of one minute can be initiated at the maximum frame rate. The manual recording is displayed on the Timeline and [Live Events Log] as [Manual Rec.*username*]. This is handy for capturing random events not associated with sensor recording or outside preset recording times.

To initiate manual recording:

1. Select a Video Window for manual recording.
2. Click [Record Now].


Record Now
Capture Still Frame
Zoom In
20 0830 0840 0850 0900 0910 0920 093

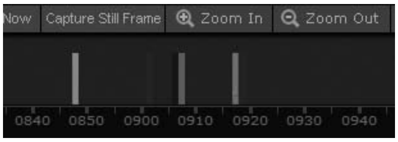
Note

- The [Record Now] function records at the maximum frame rate. Extended recording time will use additional disk space on the Storage Server. It is limited to 5 fps for VK-Lite.
- The [Record Now] function is only enabled if a Storage Server is configured for the camera.
- Recording will be for approximately one minute. The actual duration of recorded video may vary depending on settings and network delays.
- The priority of an event created by a manual recording using [Record Now] will always be Priority 1.
- The [Record Now] function allows recording video in JPEG format. However, video will be recorded in the MPEG-4 format if any only if recording in MPEG-4 is scheduled (VB-C500D, VB-C60). If audio transmission is enabled on the camera, audio recording is also performed.

■ Shoot a Snapshot

Click Capture Still Frame to keep the current image on a Video Window.

1. Select a Video Window to capture a still image.
2. Click [Capture Still Frame].


Now
Capture Still Frame
Zoom In
Zoom Out
0840
0850
0900
0910
0920
0930
0940

Note

- On Windows Vista/Windows Server 2008, don't specify the Windows folder or the Program Files folder on the system drive to store snapshots and video files, as image and video files can't be saved in those folders.
- If [Superimpose the date and time on the still frame] is selected in the Viewer settings, the date and time are displayed in the lower right corner of the still frames (the position, font, size, and color are fixed).

Friday, July 11, 2008 14:35:15.981

- Still frame images are saved in bitmap format.

Zoom In and Out of the Timeline

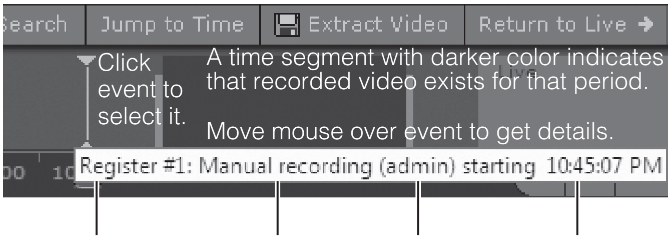
Click [Zoom In] to zoom into a time period in the Event Display Area.

Click [Zoom Out] to zoom out a time period in the Event Display Area.

Zoom In
Zoom Out

Click event to select it

When you click an event to select it, the associated Video Window will display the event(s).


Search
Jump to Time
Extract Video
Return to Live

Click event to select it.

A time segment with darker color indicates that recorded video exists for that period.

Move mouse over event to get details.

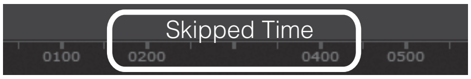
Register #1: Manual recording (admin) starting 10:45:07 PM

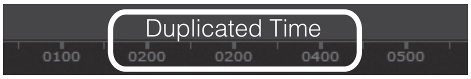
Camera Name
Type of event
User Name
Time of event

■ Daylight Savings Indicator

The Storage Server will adjust for [**Daylight Savings**] if configured in [**Date and Time**] property of the control panel as follows:

- When normal time has changed to Daylight Savings time, time that is skipped is displayed in the Timeline as missing.
- When gaining time (rewinding the clock back from 02:00 to 01:00), the extra time is duplicated.





Note

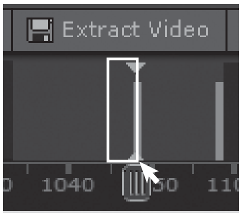
Where [**Daylight Saving**] changes have occurred, the Timeline display is still continuous. Only the labels are affected.

■ Extract video to save to a file

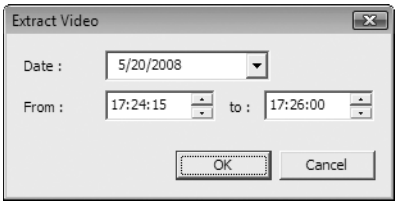
A portion of video can be saved to another location. Files are automatically saved as QuickTime .mov format and can be viewed in a QuickTime player or any other player that supports .mov files. A maximum of one hour of video can be extracted at a time. If you do not have a QuickTime player installed, visit http://www.quicktime.com for a free download.

Select a Video Window and time period then click [Extract Video].

1. Click a Video Window to highlight it, then click and drag a time period for it in the Timeline.
2. Click [Extract Video]. The [Extract Video] dialog opens.



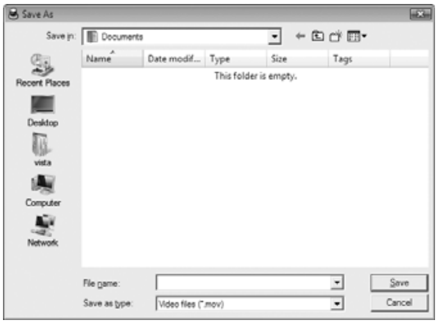
3. [Date:] Click the down arrow to select the date, or click on the date to directly input the date.
4. Click up/down arrows to select a time or click each time segment and overwrite existing value.


Extract Video
OK
Cancel

Date : 5/20/2008

From : 17:24:15 to : 17:26:00

5. Click [OK] to display the [Save As] dialog. The [Save As] dialog opens. Browse to a suitable folder in which to save the extracted video, and click [Save].


Save As
Name
Date modif...
Type
Size
Tags
Recent Places
Desktop
vista
Computer
Network
File name:
Save
Cancel

Save in: Documents

This folder is empty.

Save as type: Video files (*.mov)

Note

- You must select only one Video Window to extract video.
- QuickTime player version 6.5.1 or later is recommended.
- On Windows Vista/Windows Server 2008, don't specify the Windows folder or the Program Files folder on the system drive to store snapshots and video files, as image and video files can't be saved in those folders.
- When recording video and audio together, you cannot save only the video data or only the audio data. The video + audio are saved in a single MOV file.
- If you specify two or more MPEG-4 recorded footages for writing, only the older/oldest footage will be saved.
- If you specify JPEG and MPEG-4 recorded footages together for writing, only the older footage will be saved.

Return to Live Video

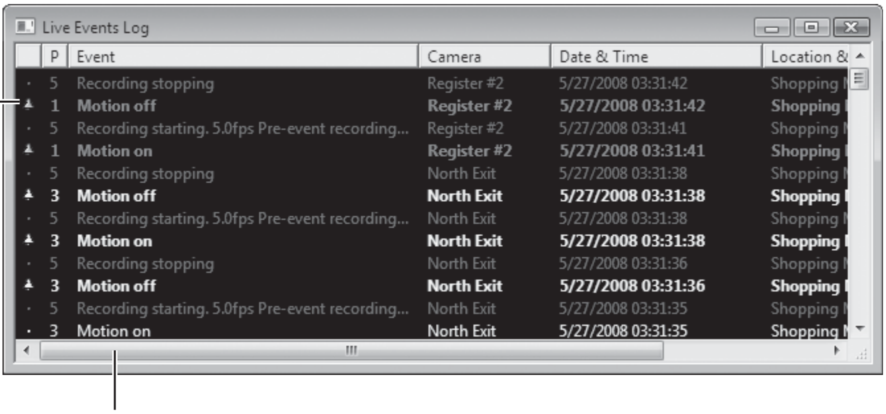
To return to the live video, click [**Return to Live →**]. The Playhead returns to the live position in the Timeline.

Return to Live

View and Search Events

■ [Live Events Log] list

The [**Live Events Log**] displays events that have occurred with one or more cameras after the Viewer has been launched. Events are color coded according to priority.



Live Events Log

	P	Event	Camera	Date & Time	Location &
·	5	Recording stopping	Register #2	5/27/2008 03:31:42	Shopping
🔔	**1**	**Motion off**	**Register #2**	**5/27/2008 03:31:42**	**Shopping**
·	5	Recording starting. 5.0fps Pre-event recording...	Register #2	5/27/2008 03:31:41	Shopping
🔔	**1**	**Motion on**	**Register #2**	**5/27/2008 03:31:41**	**Shopping**
·	5	Recording stopping	North Exit	5/27/2008 03:31:38	Shopping
🔔	**3**	**Motion off**	**North Exit**	**5/27/2008 03:31:38**	**Shopping**
·	5	Recording starting. 5.0fps Pre-event recording...	North Exit	5/27/2008 03:31:38	Shopping
🔔	**3**	**Motion on**	**North Exit**	**5/27/2008 03:31:38**	**Shopping**
·	5	Recording stopping	North Exit	5/27/2008 03:31:36	Shopping
🔔	**3**	**Motion off**	**North Exit**	**5/27/2008 03:31:36**	**Shopping**
·	5	Recording starting. 5.0fps Pre-event recording...	North Exit	5/27/2008 03:31:35	Shopping
·	3	Motion on	North Exit	5/27/2008 03:31:35	Shopping

Click and drag scroll bar to view events.

The bell icon is displayed when the event is acknowledged by double-clicking.
Double-clicking the event to acknowledge it changes the icon to a dot.

Note

Only the most recent 200 events are shown in the [**Live Events Log**].

Tip

The [**Live Events Log**] window automatically opens when you launch the Viewer, if you left it open after closing VK-64/VK-16.

■ Display the [Live Events Log] list

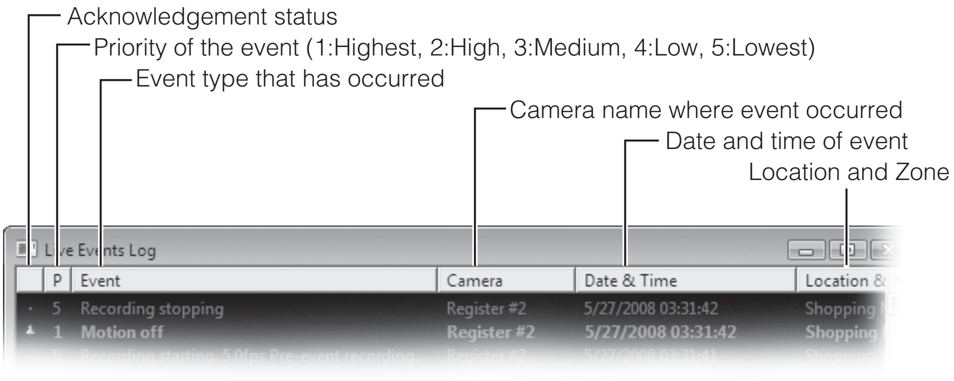
To display the [**Live Events Log**] List:

Select [Live Events] from [View] Menu

From the VK-64/VK-16 menu bar, select [**View**] and [**Live Events**].

[**Live Events Log**] list opens.

■ Overview of Alert Parameters


Acknowledgement status
Priority of the event (1:Highest, 2:High, 3:Medium, 4:Low, 5:Lowest)
Event type that has occurred
Camera name where event occurred
Date and time of event
Location and Zone
Live Events Log

	P	Event	Camera	Date & Time	Location &
·	5	Recording stopping	Register #2	5/27/2008 03:31:42	Shopping
▲	**1**	**Motion off**	**Register #2**	**5/27/2008 03:31:42**	**Shopping**
·	5	Recording starting, 5.0fps Pre-event recording...	Register #2	5/27/2008 03:31:41	Shopping

Acknowledge and View Events

A new event entry will appear at the top of the [Live Events Log] list and will flash for a defined period if configured. If Operator Acknowledgement is required, the event will flash indefinitely if not acknowledged.

1. In the [Live Events Log], double-click on the event to acknowledge. Double-click again if you need to check the video.
2. In the bottom right corner of the Viewer, click [Return to Live →] when you have finished viewing the event. The Video Window will return to live viewing.

■ Search Events

If you have multiple events, you can initiate a search for a particular event via the [**Event Search**] dialog.

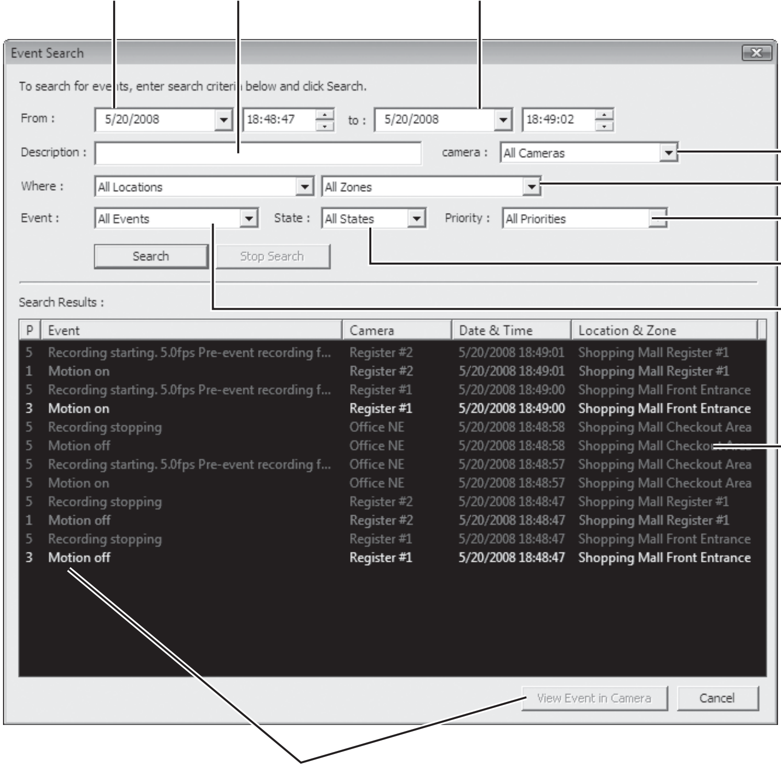
To launch the [**Event Search**] Dialog:

Click [Event Search]

On the Timeline, click [**Event Search**].

The [**Event Search**] dialog opens.

Event Search



Enter a search start date and time.

Enter a keyword for particular events.

Enter a search end date and time.

To search for events, enter search criteria below and click Search.

From : 5/20/2008 18:48:47 to : 5/20/2008 18:49:02

Description :

camera : All Cameras

Where : All Locations All Zones

Event : All Events State : All States Priority : All Priorities

Search Results :

P	Event	Camera	Date & Time	Location & Zone
5	Recording starting. 5.0fps Pre-event recording f...	Register #2	5/20/2008 18:49:01	Shopping Mall Register #1
1	Motion on	Register #2	5/20/2008 18:49:01	Shopping Mall Register #1
5	Recording starting. 5.0fps Pre-event recording f...	Register #1	5/20/2008 18:49:00	Shopping Mall Front Entrance
3	Motion on	Register #1	5/20/2008 18:49:00	Shopping Mall Front Entrance
5	Recording stopping	Office NE	5/20/2008 18:48:58	Shopping Mall Checkout Area
5	Motion off	Office NE	5/20/2008 18:48:58	Shopping Mall Checkout Area
5	Recording starting. 5.0fps Pre-event recording f...	Office NE	5/20/2008 18:48:57	Shopping Mall Checkout Area
5	Motion on	Office NE	5/20/2008 18:48:57	Shopping Mall Checkout Area
5	Recording stopping	Register #2	5/20/2008 18:48:47	Shopping Mall Register #1
1	Motion off	Register #2	5/20/2008 18:48:47	Shopping Mall Register #1
5	Recording stopping	Register #1	5/20/2008 18:48:47	Shopping Mall Front Entrance
3	Motion off	Register #1	5/20/2008 18:48:47	Shopping Mall Front Entrance

Select a camera.

Select a Location and Zone.

Select a Priority.

Select a state of event.

Select a type of event.

Search Result Display Area.

Double-click an event to view it in the Video Window, or click an event to highlight it and then click [**View Event in Camera**] to view it.

■ Select Criteria for Searching

When you initiate a search, certain criteria can be specified such as Priority, Location and Zone on the network, a date range when the event may have occurred and a time period.

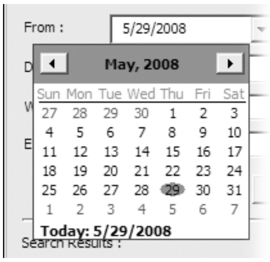
To initiate a search:

Step 1: Select a date and time range to search

Click in the [From] and [To] date panels and overwrite the existing entries for month/day/year and time.

Alternatively, click the down arrow next to each date panel to bring up the calendar. Click off the calendar to close it again.

In the [Event Search] dialog, you can also scroll through time using the up/down arrows. Click an hours, minutes or seconds segment to highlight it and then click the up or down arrow.



From : 5/29/2008

May, 2008
Sun Mon Tue Wed Thu Fri Sat
27 28 29 30 1 2 3
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31
1 2 3 4 5 6 7
Today: 5/29/2008
Search Results :

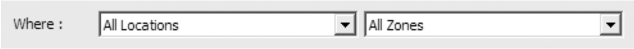
Step 2: Select a camera

Select the camera you want to search by from the drop-down menu. Once you have selected a specific camera, the Location and Zone specified in [Where] are ignored.

camera : All Cameras

Step3: Select a Location and Zone to search

From the [Where] fields, select a Location and Zone from the drop-down lists.



Where : All Locations All Zones

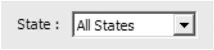
Step 4: Select a type of Event

Select a type of Event from the drop-down list.

Event : All Events

Step 5: Select a State

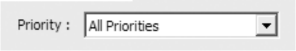
Select a State for the event, whether it was [On] or [Off] during the period. Alternatively, select [All States].



State : All States

Step 6: Select a Priority

Select a Priority from the drop-down list.

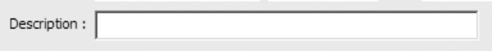

Priority :
All Priorities

Step 7: Click [Search]

When you have entered the day and time range, click [Search] to initiate the event search. Events that are found will be listed in the window below. If necessary, stop a search at any time by clicking [Stop Search].

Tip

You can search events by keywords, such as "deleting", "recording" or "frames" etc, when using [Description]. Found events will be event tips based on entered events.

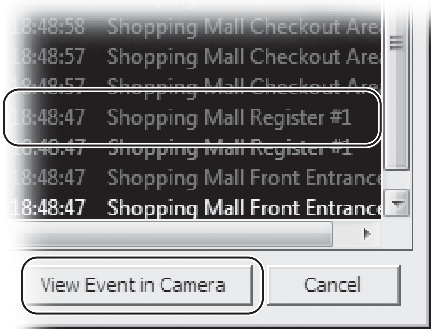

Description :

■ View retrieved recorded video

To view video of when an event occurs, click the event to highlight it and click [View Event in Camera] to view it in a Video Window.

You can also view recorded video by double-clicking the event.

Clicking [Cancel] stops any searching and closes the dialog.

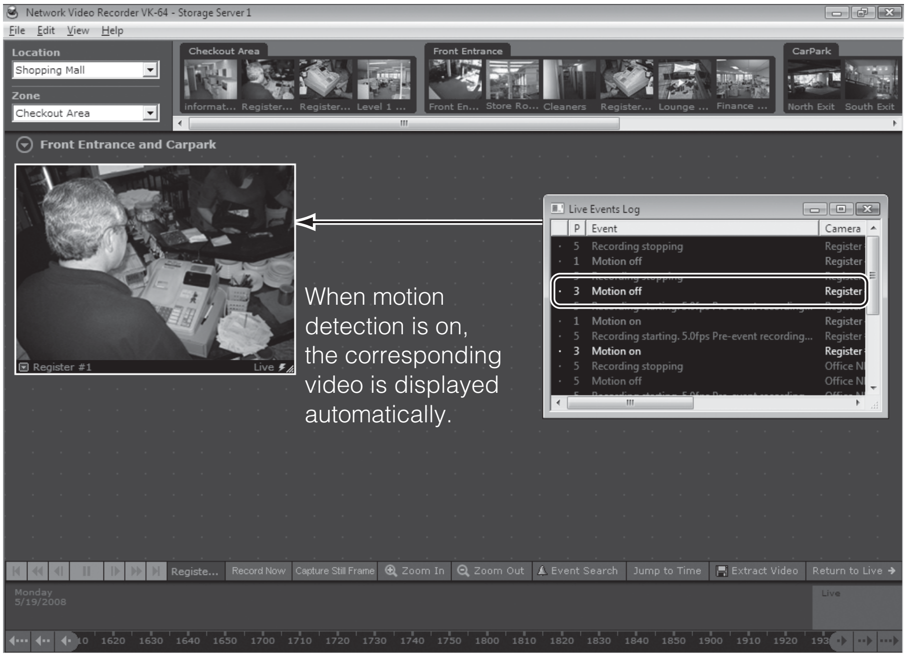

8:48:58 Shopping Mall Checkout Are
8:48:57 Shopping Mall Checkout Are
8:48:57 Shopping Mall Checkout Are
8:48:47 Shopping Mall Register #1
8:48:47 Shopping Mall Register #1
8:48:47 Shopping Mall Front Entranc
8:48:47 Shopping Mall Front Entranc
View Event in Camera
Cancel

Note

When you have finished viewing an event in a Video Window, click [Return to Live →] in the Timeline to return the Video Window to live viewing.

Popup Video upon Event Occuring

Select the [**Pop up the video window automatically when event occur**] checkbox under the [**Video Window Popup Setting**] administrator tab in the [**Viewer Settings**] screen to display the corresponding video window in the foreground and begin live viewing when a sensor input or motion detection occurs.


Network Video Recorder VK-64 - Storage Server 1
File Edit View Help
Location
Shopping Mall
Zone
Checkout Area
Checkout Area
informat... Register... Register... Level 1 ...
Front Entrance
Front En... Store Ro... Cleaners Register... Lounge ... Finance ...
CarPark
North Exit South Exit
Front Entrance and Carpark
Register #1
Live
Live Events Log
Registe... Record Now Capture Still Frame Zoom In Zoom Out Event Search Jump to Time Extract Video Return to Live
Monday
5/19/2008
Live
10 1620 1630 1640 1650 1700 1710 1720 1730 1740 1750 1800 1810 1820 1830 1840 1850 1900 1910 1920 193

P	Event	Camera
5	Recording stopping	Register
1	Motion off	Register
5	Recording stopping	Register
3	Motion off	Register
5	Recording starting. 5.0fps Pre-event recording...	Register
1	Motion on	Register
5	Recording starting. 5.0fps Pre-event recording...	Register
3	Motion on	Register
5	Recording stopping	Office N
5	Motion off	Office N

When motion detection is on, the corresponding video is displayed automatically.

Note

- If the video window that pops up is in the Viewer Area, that window is automatically displayed in the foreground.
- The size of video windows that are displayed automatically is [**Medium**] (320x240).

6

Operation and Management

Chapter Overview

This chapter explains points to notice concerning the Storage Server when you operating and maintaining the network camera system, as well as guidelines for operating the system.

Health Check for Storage Server

Explains the messages displayed for VK events and gives example resolutions, and also explains the number of frames queued for processing for each camera.

Operation Guideline for Recording and Viewing

Explains frame rates for recording and live viewing via the Viewer.

Operation Guideline for Sensor Event Recording

Explains operation tips concerning the sensor event recording, including points to notice and counteractions against troubles.

Optimization of Motion Detection Recording (Index)

Explains operation tips concerning the Motion Detection recording, including points to notice and counteractions against troubles.

VK Events (Timeline for VK Viewer)

If any of the events listed in the table below occurs, you may have to take the specified counteraction.

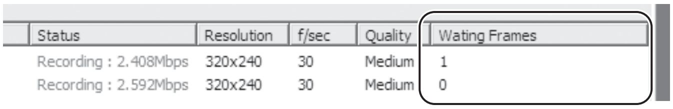
The text within < > in each message depends on the situation.

Event type	Message	Description	Counteraction example
Indicates the free space on the disk	warning (on) / ok (off) Disk space on drive <Drive Name> <Situation>	This event occurs when the disk free space has run under the specified value or the used disk space has exceeded the specified valued. In this case, data may be deleted before the designated storage time elapses. Disk capacity indication is only effective when it is on.	Review the recording and Camera Server settings (→ P. 3-10, P. 4-24)
Starts and stops deletion due to space shortage. (*)	starting (on)/stopping (off) deleting files on drive <Drive Name> due to disk free space shortage: <Situation>	This event occurs when the disk free space has run under the threshold value or the used disk space has exceeded the threshold valued.	
Pauses and resumes recording due to space shortage. (*)	starting (on)/stopping (off) <situation> suspension of recording on drive <drive name> due to low disk space	This event occurs when the disk free space has run under the threshold value or the used disk space has exceeded the threshold valued.	
Connection error to the Camera Server	error (on) /ok (off) Connection to host <Camera Server Address>: <Port> <Situation>	This event occurs when an error has occurred while connecting to the Camera Server. However, it does not necessarily occur for every connection failure. When this event occurs, the recording engine tries for reconnection and a COMM error occurs if the retry fails.	Review the network connection (→ P. 4-24).
Recording frame rate change	Effective recording rate (<recording rate before change> → <recording rate after change> %) Example: Ex. "Recording rate (100.0 > 90.0 %)" * This is not an On/Off event.	This event indicates that the recording frame rate has been reduced due to increased server load.	Review the recording settings or consider adding the Storage Server (→ P. 4-14).

For the items marked with (*), see "Important: Disk Space Management" (→ P. 3-17).

Number of Frames Queued for Processing

The [**Camera Summary**] screen displays the number of frames queued for processing for each camera, allowing you to check the load conditions of the PC.



Status	Resolution	f/sec	Quality	Wating Frames
Recording : 2.408Mbps	320x240	30	Medium	1
Recording : 2.592Mbps	320x240	30	Medium	0

This information is updated at every 5 seconds.

Note

If the number of frames queued for processing exceeds 500, either reduce the video recording frame rate, or reduce the image size or quality, etc. in order to reduce the number of frames queued for processing. If the number of frames queued for processing exceeds 1,000, dropped frames may occur in the recorded video.

Operation Guideline for Recording and Viewing

The following explains the automatic frame rate adjustment function for viewing and recording.

This function checks the load of the PC on which the Storage Server and the Viewer are running and adjusts the frame rate for video recording and live viewing.

Note

Using this function is recommended; however, make sure you perform tests under actual conditions before starting operations.

Live-View Frame Rate Adjustment

[Auto Adjust Frame Rate] in the [Viewer Settings] (→ P. 5-16)

* This option is enabled by default (recommended).

When displaying live video, the Viewer requests the camera to send the video at the specified frame rate (→ [Max. Live Frame Rate] on P. 5-16).

If you use this function, you can maintain a stable display of live video with a temporarily lowered frame rate even if your PC temporarily becomes highly loaded for some reasons.

If you do not use this function, menu operation or display response may be affected when the load on your PC is high.

For video in MPEG-4 format, the [Max. Live Frame Rate] and [Auto Adjust Frame Rate] settings are ignored, and the frame rate that is sent from the camera is displayed.

Recording Frame Rate Adjustment

[Reduce recording frame rate when disk is under high load] in the [Storage Server Configuration] dialog (→ P. 3-10)

* This option is enabled by default (recommended).

When the network recording software writes images received from cameras into the hard disk, if the load (mainly the load of writing into the hard disk) of the PC on which the Storage Server is running is too high, the software cannot write the images immediately.

If the amount of the image that is waiting to be written increases for a certain period of time, the Storage Server considers the PC to be highly loaded. When this happens, the Storage Server stores images at intervals rather than storing all of the images the Storage Server received, in order to reduce the PC load.

If you use this function, you can avoid recording failure as much as possible even if your PC temporarily becomes highly loaded for some reasons. When using this setting, adjust the video recording frame rate so that it does not drop below 0.5 fps.

Note that events are generated when the network recording software starts and ends the operation of the function (→ P. 9-34, "Changing the recording frame rate"). You can check the operating status of the function via the Event Search dialog (→ P. 5-58).

If you do not use this function, recording may be interrupted when the load on your PC is high. This software cannot detect the recording interruption.

This function is disabled when the [Resolution] is set to [MPEG-4].

Proper Operation of Sensor Event Recording (Optimization of Sensor Arrangement and Sensitivity)

Frequent sensor events result in high CPU load on your PC, and the recording frame rate may be reduced or recording may be interrupted. If you have 10 or more sensor events per minute continuously, we recommend continuous recording.

For each Storage Server, it is recommended to lower the sensor sensitivity or use continuous recording.

- 20,000 or more sensor events occur a day.
- 10 or more sensor events occur every minute.

Tip

Check the number of sensor events with the status bar.

Optimization of Motion Detection Recording (Index)

The Motion Detection recording is not suited to applications where high levels of reliability are required. Therefore, it is recommended to use continuous recording for monitoring or other purposes if consistently high levels of reliability are required. Canon accepts no liability whatsoever for faults, etc. resulting from the use of the Motion Detection recording.

Frequent motion detection events result in high CPU load on your PC, and the recording frame rate may be reduced or recording may be interrupted. If you have 10 or more motion detection events per minute continuously, we recommend continuous recording.

Frame Rate indicates the number of frames for Motion Detection recording. Lowering this value mitigates load on the Storage Sever.

Tip

- Longer before event recording with insufficient memory may lead to the use of disk-based virtual memory which will greatly reduce performance. Shorter before event recording will reduce memory usage.
- The full requested duration of post event recording may not be available due to data size and network delays.

Motion Detection Setting for Each Camera Model

VB-C500D, VB-C60, VB-C50i/VB-C50iR, VB-C50FSi, VB-C50Fi, VB150

Configure the Motion Detection settings on the Camera Server.

Please see the Camera Server User's Manual for details.

For the VB150, [Video Input] must be set to [Single].

VB-C300

Configure the Motion Detection settings on the Storage Server.

See "Set Motion Detection Recording" (→ P. 4-46) for details on how to set the Motion Detection parameters.

Typically, set the total frame rate to 150 fps (e.g., 30 fps with five cameras) with the display resolution of QVGA.

7

Backup Scheme

Chapter Overview

This chapter explains how to make backups for each purpose.

Since the volume of video data the largest among various data types requiring backup, you must carefully choose backup equipment and learn the backup techniques.

Purpose

Purposes of backup include.

- Backup for Data Protection

  Prevents data from system crush or hard disk failure. This type of back up targets video data, event data, and configuration files.

- Backup for Archive

  Stores recorded video data and event data on other media for a long period of time.

Backup Device

Prepare necessary equipment for backup depending on the data quantity of the VK-64/VK-16. Basically, you should use the DDS-4 type device if a single backup copies several Gigabytes through 40 GB of data, and DAT72 or AIT if it copies around 70 GB of data.

Further, if backup data quantity reaches 100 through 400 GB, you should use the LTO device. If you need more capacity or want to omit media replacement, you can consider auto loaders for the LTO device.

- Backup Example for VK-64/VK-16

  If 10 Camera Servers record video for 30 days at 1 fps (10 KB)

  the required data capacity is 300 GB per month, 70 GB per week, and 10 GB per day.

  In this case, it is recommended to use the LTO device (Ultrium tape device). This type of device records 100 through several hundreds GB of data at the average transfer speed of 25 through 30 MB/sec (or 40 through 60 MB/sec when data is compressed).

  The time required for making backup of data for 30 days (300GB) is approximately 12,000 seconds (i.e., 3.5 hours). The time is shortened to approximately 2.5 hours when data is compressed (Although the hardware specifications mention that the transfer speed will be doubled by compressing data, the expected compression ratio depends on data formats. Therefore, it is dangerous to think so).

  The time required for making backup of data for a week (70GB) is approximately 2,800 seconds (i.e., a little longer than 46 minutes).

  The time required for making backup of data for one day (10GB) is approximately 400 seconds (i.e., 6 minutes 40 seconds).

Note

Recording does not stop while making a backup of data; however, the recording frame rate may be reduced from the specified value due to disk I/O load and CPU load.

Tip

Video data for VK-64/VK-16 is irreversible compressed data. Compression process done by tape or other devices is not necessary.

Backup Tool

It is recommended to use a third-party backup tool for Windows. Read the manual of the tool for deployment.

Restore Server for Archiving

If the purpose of backup is archive, you should prepare a separate PC for the Storage Server to which data will be restored. This PC must have the same drive configuration (e.g., hard disk configuration). For example, if the source server's system drive is C and data storage drive is D, and video data drive is E, you must configure the PC with the same drive configuration. However, the hard disk capacity must be determined according to data to restore.

Files to Make a Backup

Storage Location of Video Data, Audio Data, and Event Data

Video data being recorded is saved in a temporary file (See "About Temporary File" below), and the file is settled and saved as video data when its size reaches 1 GB (by default) to the storage drive.

Audio data is recorded using the G71 µ Law format, and saved in the QuickTime file format. The audio recording bitrate is 64 Kbps.

The recorded video data, audio data, and event data are saved in the following folders according to your settings for [Save video in] and [Drive] when you register Camera Servers (→ P. 4-23).

Recorded Video data

<Save video in>: \WebView-NVR\videofiles

The following two file types are backed up:

File name =
NVR_INDEX_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss_yyyymmdd_hhmmss.mov
Camera ID Recording start date_time Recording end date_time

(For JPEG Video)
File name =
NVR_MEDIA_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss_yyyymmdd_hhmmss.avi

OR

(For MPEG-4 Video)
File name =
NVR_MPEG4_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss_yyyymmdd_hhmmss.mov

> **Note**
> These two files are used in pairs. Be sure to back up both files.

> **Tip**
> The recorded video data file name contains the Greenwich Mean Time as the time stamp.

- About Temporary File

  File name = NVR_STANDBY_MEDIA_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss.avi

  File name = NVR_STANDBY_MEDIA_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss.avi.tmp

  File name = NVR_STANDBY_MEDIA_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss.mov

  File name = NVR_STANDBY_MPEG4_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss.mov

  These four files are not yet settled by the system.

- Recorded Data Concept

  Video data being recorded is saved in a temporary file, and the file is settled and saved as video data when its size reaches 1 GB (by default) to the storage drive. This recording unit can be changed in the [**Maximum file size/duration**] field, in the [**Storage Server Configuration**] window's [**Settings**] tab (→ P. 3-10).

  Temporary files cannot be backed up in the normal procedure.

Recording (For JPEG Videos)

NVR_STANDBY_MEDIA_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss.avi
NVR_STANDBY_MEDIA_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss.avi.tmp
NVR_STANDBY_MEDIA_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss.mov
NVR_STANDBY_AUDIO_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss.avi
NVR_EVENT_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss.evt

↓

Recorded video data (after settled)

NVR_INDEX_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss_yyyymmdd_hhmmss.mov
NVR_MEDIA_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss_yyyymmdd_hhmmss.avi
NVR_EVENT_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss.evt

Audio data

<Save video in>: \WebView-NVR\videofiles

The following file types are backed up.

File name =
NVR_AUDIO_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss_yyyymmdd_hhmmss.mov
Camera ID Recording start date_time Recording end date_time

Tip

The recorded audio data file name contains the Greenwich Mean Time as the time stamp.

- Temporary files

  The following files are the files before being settled by the system.

  File name =NVR_STANDBY_AUDIO_xxxxxxxxxxxxxxxx_yyyymmdd_hhmmss.avi

Event data

<Save video in>: \WebView-NVR\eventfiles

The following file types are backed up:

File name = NVR_EVENT_$\underset{\text{Camera ID}}{\underline{\text{xxxxxxxxxxxxxxxx}}}$_$\underset{\text{Recording start date_time}}{\underline{\text{yyyymmdd_hhmmss}}}$.evt

Tip

The recorded event data file name contains the Greenwich Mean Time as the time stamp.

Configuration files

The configuration files for the Storage Server and Viewer are saved in the following folders of the PC where each program is installed.

Configuration file path for OS other than Windows Vista/Windows Server 2008
<System Drive>:\Documents and Settings\All Users\Application Data\Canon\WebView\NVR\

Configuration file path for Windows Vista/Windows Server 2008
<System Drive>:\ProgramData\Canon\WebView\NVR\

Back up the entire contents of this folder.

Tip

- The configuration file names do not appear if the [**Show hidden files**] is not checked under the Windows [**Folder Option**].
- You cannot use the shadow backup function of Windows Vista/Windows Server 2008.

Backup for Data Protection

About Backup

When making a backup of data for protection, you must back up the following data:

- Recorded video data ---- It is recommended to make an incremental backup of this data. See P. 7-5 for the file names and storage location.
- Event data ------------------ It is recommended to make an incremental backup of this data. See P. 7-7 for the file names and storage location.
- Configuration file ---------- Usually, make a backup of the configuration file when the system is installed, and do it again each time you change the settings of the VK-64/VK-16. However, if the management is complicated, you can perform a full backup every day. See P. 7-7 for the storage location.

Notes on Backing Up Recorded Video Data

Video data being recorded is saved in a temporary file on a hard disk drive. The temporary file cannot be backed up in the normal procedure. See "Recorded Video data" (→ P. 7-5) for details.

The temporary file cannot be backed up until it is converted into video data.

You should choose the backup hardware best suited for the backup data quantity. Basically, you should use the DDS type device if a single backup copies 1 through 10 GB of data, and AIT device if it copies 10 GB through 100 GB of data, and LTO device if it copies 100 through 400 GB of data. If you need more capacity, you need to consider multiple backup devices. Also, it is recommended to use a backup device with a high data transfer rate.

If the total capacity of the hard disk reaches several terabytes, you should rather consider, than making backups, using hot-spare hard disks or highly reliable storage system, or further reliable and available RAID system.

Backup for Archiving (Long-Term Storage of Data)

When making a backup of data for long-term archive, you must back up the following data:

- Recorded video data ---- It is recommended to make an incremental backup of this data. See P. 7-5 for the file names and storage location.
- Event data ------------------ It is recommended to make an incremental backup of this data. See P. 7-7 for the file names and storage location.
- Configuration file ---------- Usually, make a backup of the configuration file when the system is installed, and do it again each time you change the settings of the VK-64/ VK-16. However, if the management is complicated, you can perform a full backup every day. See P. 7-7 for the storage location.

Notes on Backing Up Recorded Video Data

Video data being recorded is saved in a temporary file, and the file is settled and saved as video data when its size reaches 1 GB (by default) to the storage drive. The temporary file cannot be backed up in the normal procedure. Therefore, backup only the settled files. See "Backup for Data Protection" (→ P. 7-8) for details.

When choosing the backup device, consider the backup unit. For example, if the backup unit is 100 through 400 GB, use a high-density tape device called LTO device. If it is around 2TB (far beyond 400 GB), consider LTO auto loader device.

Backup Procedure for Video Data and Event Data

Back Up Recorded Video Data and Event Data.

1. **Estimate the total quantity of recorded video data for backup.**

   The video data quantity per day can be calculated as: Image file size per frame x Frame rate x Number of Camera Servers x Recording time (seconds) per day.

   See "Server Sizing Concept" (→ P. 1-19) for details.

2. **Prepare the backup device and backup tool for Windows according to the estimated quantity.**

3. **Set up the backup tool as directed on P. 7-4.**

   Be sure to exclude the temporary files from the backup target.

Note

If the VK-64/VK-16 continues recording video while making a backup, you must take into account the increased I/O load on the hard disk due to data transfer to the backup device. If the recording frame rate of the Storage Server is reduced by performing the backup, consider the following:

- Lower the recording frame rate during backup in the Recording Schedule Setting window.
- Establish multiple I/O channels (e.g., RAID cards) on the Storage Servers to deploy multi-storage configuration and distribute the recorded video data among servers. Choose a backup device according to the storage configuration.
- Use multiple Storage Servers and use a dedicated backup device for each server. See P. 1-18 for how to use multiple Storage Servers.

Restoration Procedure

Restore Data from Backup for Data Protection

The following explains how to reconstruct the Storage Server for the VK-64/VK-16 for maintenance or recovery from a failure.

1. Check that the PC hardware environment has been restored to the former state. Be sure to use the same folder organization as before.
2. Install the VK-64/VK-16.
3. After installation completes, stop the Storage Server from the [Storage Server Configuration] window.
4. Restore the VK-64/VK-16's configuration file to the former location.

   The default location is as follows:

   Configuration file path for OS other than Windows Vista/Windows Server 2008
   <System Drive>:\Documents and Settings\All Users\Application Data\Canon\WebView\NVR\

   Configuration file path for Windows Vista/Windows Server 2008
   <System Drive>:\ProgramData\Canon\WebView\NVR\
5. Restore the recorded video data file to the former location.

   The default location is as follows:

   <Save video in>:\WebView-NVR\videofiles
6. Restore the event data file to the former location.

   The default location is as follows:

   <Save video in>:\WebView-NVR\eventfiles
7. Start the Storage Server from the [Storage Server Configuration] window.
8. Check that the recording operation is performed correctly. Also check that restored video data is played back correctly.

Note

If the [**Maximum retained history**] setting is used in the [**Storage Server Configuration**] window and the restored video data contains data exceeding the retaining period, that data will be deleted when the Storage Server starts.

Restore Data from Backup for Data Archiving

The following explains how to restore only necessary files from the data backup for archive.

1. Check that the drive configuration of the PC to which the files are restored is the same as the PC from which the files were backed up.

   Be sure that the hard disk has a capacity larger than the total size of the video data files to restore.

2. Install the VK-64/VK-16.
3. Restore the VK-64/VK-16's configuration file to the former location. The default location is as follows:

   Configuration file path for OS other than Windows Vista/Windows Server 2008
   <System Drive>:\Documents and Settings\All Users\Application Data \Canon\WebView\NVR\

   Configuration file path for Windows Vista/Windows Server 2008
   <System Drive>:\ProgramData\Canon\WebView\NVR\

4. Uncheck the [Maximum retained history] option in the [Storage Server Configuration] window.
5. Launch the Viewer and delete all the schedules for all the Camera Servers in the [Recording Schedules] tab under the [Settings] screen.
6. After deleting schedules, stop the Storage Server from the [Storage Server Configuration] window.
7. Restore video data files matching the date and time you want to play back to the former location. The default location is as follows:

   <Save video in>:\WebView-NVR\videofiles

8. Restore event data files matching the date and time you want to play back to the former location. The default location is as follows:

   <Save video in>:\WebView-NVR\eventfiles

9. Start the Storage Server from the [Storage Server Configuration] window.
10. Also check that restored video data is played back correctly.

Notes on Restoring Data from Backup for Data Archiving

- When restoring the configuration file, also the old recording setting information is restored as well. After restoration, the PC may start recording video according to the old recording schedule. If you do not want to record video, delete the recording schedules after restoration.
- If the [**Maximum retained history**] setting is used on the Storage Server, uncheck this option. If this option is enabled, the past data may be lost.

Examples

Configuration 1: Backup for Data Protection 1

Premise

5 units of VB-C50i

Recording condition

Frame rate is 1 fps (one frame per second), Camera Server video quality is 50, resolution is 320x240, the size for one image data is 15 KB.

The [**Maximum file size/duration**] option in the [**Storage Server Configuration**] window is set to six hours.

Under this condition, the video file size per Camera Server per day is 310 MB x 4 files.

Therefore, the video data quantity per Camera Server per day is 1.25 GB and 6.25 GB for five Camera Servers.

Hardware requirement

6.25 GB per day x 30 days = 190 GB Hard disk capacity of around 240 GB is required.

If the storage period of video data on the Storage Server is 30 days, an archive backup for 1-week data can be saved on 50-GB tape with an AIT drive. To save 30-day data on a single cassette of tape, a 200-GB LTO drive is necessary.

Configuration 2: Backup for Data Protection 2

Premise

10 units of VB-C50i

Recording condition

Frame rate is 1 fps (one frame per second), Camera Server video quality is 50, resolution is 320x240, and the size for one image data is 15 KB.

The [**Maximum file size/duration**] option in the [**Storage Server Configuration**] window is set to six hours.

Under this condition, the video file size per Camera Server per day is 310 MB x 4 files.

Therefore, the video data quantity per Camera Server per day is 1.25 GB and 12.5 GB for ten Camera Servers.

Hardware requirement

12.5 GB per day x 30 days = 375 GB Hard disk capacity of around 450 GB is required.

If the storage period of video data on the Storage Server is 30 days, and the required archive period is 180 days, an archive backup for 1-week data can be saved on 100-GB tape with an LTO drive (Ultrium). If you use a 400-GB LTO drive, you can save 30-day data on a single cassette of tape.

Configuration 3: Backup for Data Archiving

Premise

5 units of VB-C50i

Recording condition

Frame rate is 1 fps (one frame per second), Camera Server video quality is 50, resolution is 320x240, and the size for one image data is 15 KB.

The [**Maximum file size/duration**] option in the [**Storage Server Configuration**] window is set to six hours.

Under this condition, the video file size per Camera Server per day is 310 MB x 4 files.

Therefore, the video data quantity per Camera Server per day is 1.25 GB and 6.25 GB for five Camera Servers.

Hardware requirement

6.25 GB per day x 30 days = 190 GB Hard disk capacity of around 240 GB is required.

If the storage period of video data on the Storage Server is 30 days, and the required archive period is 180 days, an archive backup for 1-week data can be saved on 50-GB tape with an AIT drive. If you use a 100-GB LTO drive, you can save 1-week backup data.

However, if the tape capacity for archive is too large, we should consider that it takes too long to find desired data from the restored data.

Configuration 4: Backup from Multiple Storage Servers (Backup for Data Protection)

Premise

100 units of VB-C50i

Recording condition

Frame rate is 1 fps (one frame per second), Camera Server video quality is 50, resolution is 320x240, and the size for one image data is 15 KB.

Twenty Camera Servers are registered in five Storage Servers to record video.

The [**Maximum file size/duration**] option in the [**Storage Server Configuration**] window is set to six hours.

Under this condition, the video file size per Camera Server per day is 310 MB x 4 files.

Therefore, the video data quantity per Camera Server per day is 1.25 GB and 25 GB for twenty Camera Servers.

Hardware requirement

25 GB per day x 30 days = 750 GB Ten servers is required (for each Hard disk capacity of 900 GB or more).

In this case, it is ideal to prepare one backup device for each server for backup. If you use a 400-GB LTO drive, you can save 2-week data on a single cassette of tape. Alternatively, you can prepare two or three servers dedicated for backup, and use network backup for central management.

8

System Maintenance

Chapter Overview

This chapter describes about the version upgrade, reinstallation and restoration of the older version for VK-64/VK-16, and about the version upgrade of camera's firmware.

Upgrade VK-64/VK-16

This section describes how to upgrade previous versions of VK-64/VK-16.

Upgrade from Version1.0

1. Obtain the released version of v2.1 (you cannot use the upgrade program).
2. Back up the following folders that are in the Storage Server of v1.0.

   <Installation folder for VK-64> \NVR\1.0\conf
   <<Example>> C:\Program Files\Canon\Webview\NVR\1.0\conf

   <All drives>:\WebView-NVR
   Please note that the capacity of this folder is large.
3. Install the new version.

   If a failure occurs, restore the previous version by following "Procedure for Restoring Previous Version" (→ P. 8-6).

Upgrade from v1.1, 1.2, 1.3, 1.4 and 2.0

1. Obtain the v2.1 upgrade program (free program).

   Available from Canon Web site.
2. Back up the following folders that are in the Storage Servers of v1.1, v1.2, v1.3, v1.4 and v2.0.

   Configuration file path for OS other than Windows Vista/Windows Server 2008
   <Startup drive for OS>:\Documents and Settings\All Users\Application Data\Canon\Webview\NVR
   <All drives>:\WebView-NVR

   Configuration file path for Windows Vista/Windows Server 2008
   <Startup drive for OS>:\ProgramData\Canon\WebView\NVR\
   <All drives >:\WebView-NVR
3. Install the new version by following the upgrade procedure described at our WebView Product web page.

   If a failure occurs, restore the previous version by following "Procedure for Restoring Previous Version" (→ P. 8-6).

Note

- When upgrading your PC to Windows Vista or Windows Server 2008, first upgrade the software to v2.1 before upgrading to Windows Vista or Windows Server 2008.
- If you are using VK-64/VK-16 with NAS server, you need to set up log-on settings again after upgrading VK from v1.3, v1.4, and v2.0 to v2.1.

Version upgrade from VK-Lite

1. First, you need to buy VK-64/VK-16 v2.1 (there are no upgrade program available).
2. Back up following folders of the VK-Lite storage server.

   For OS other than Windows Vista/Windows Server 2008
   <Startup drive for OS>:\Documents and Settings\All Users\Application Data\Canon\WebView\NVR
   <All drives>:\WebView-NVR

   For Windows Vista/Windows Server 2008
   <Startup drive for OS>:\ProgramData\Canon\Webview\NVR
   <All drives>:\WebView-NVR
3. Uninstall VK-Lite in [Add or Remove Programs] in [Control Panel] ([Uninstall a program] or [Programs and Features] in Windows Vista or Windows Server 2008).
4. Install VK-64/VK-16 v2.1. If it failed, follow the instruction in "Procedure for Restoring Previous Version" (→ P. 8-6) to restore VK-Lite.

Reinstall VK-64/VK-16

You cannot reinstall the software if you use the upgrade program.

When You Have the Released Version

1. Uninstall v2.1.
2. Back up the following folders that are in the Storage Servers of v1.1, v1.2, v1.3, v1.4 and v2.0.

   Configuration file path for OS other than Windows Vista/Windows Server 2008
   <Startup drive for OS>:\Documents and Settings\All Users\Application Data\Canon\Webview\NVR
   <All drives> :\WebView-NVR

   Configuration file path for Windows Vista/Windows Server 2008
   <Startup drive for OS>:\ProgramData\Canon\WebView\NVR\
   <All drives>:\WebView-NVR

3. Install the new version by following the upgrade procedure described at our WebView Product web page.

   If a failure occurs, restore the previous version by following "Procedure for Restoring Previous Version" (→ P. 8-6).

When You Do Not Have the Released Version 2.1

1. Uninstall v2.1.
2. Install the previous version.
3. Obtain the v2.1 upgrade program (free program).

   Available from Canon Web site.

4. Execute the v2.1 upgrade program.

Tip

When You Want to Perform the Full New Installation If you have removed the application from [**Programs and Features**] in the [**Control Panel**], the application folder, including its setting files and recorded data, remains undeleted. To delete all these files, delete all the following folders.

- <System drive> :\Program Files\Canon\Webview\NVR
- <System drive> :\Webview-NVR (storage folder for recorded and event data)

Regarding the storage folder for configuration files, see <Startup drive for OS> in the Configuration file path above.

Procedure for Restoring Previous Version

Required Media and Data

Make sure that you have the installation CD, patch installer and backed-up data for the previous version.

1. Delete [Canon Network Video Recorder VK Series v2.1] from [Add or Remove Programs] in [Control Panel].
2. Delete the following folders.

   Configuration file path for OS other than Windows Vista/Windows Server 2008
   <Startup drive for OS>:\Documents and Settings\All Users\Application Data\Canon\Webview\NVR
   <All drives>:\WebView-NVR

   Configuration file path for Windows Vista/Windows Server 2008
   <Startup drive for OS>:\ProgramData\Canon\WebView\NVR\
   <All drives>:\WebView-NVR
3. Install the previous version by using the installation CD and patch installer for the previous version.
4. Stop the Storage Server in the Storage Server configuration. Quit the Viewer.
5. Replace the existing folders with the following backed-up data.

   In case of Version 1.1, 1.2, 1.3, 1.4 and 2.0

   Configuration file path for OS other than Windows Vista/Windows Server 2008
   <Startup drive for OS>:\Documents and Settings\All Users\Application Data\Canon\Webview\NVR

   Configuration file path for Windows Vista/Windows Server 2008
   <Startup drive for OS>:\ProgramData\Canon\WebView\NVR\

   In case of Version 1.0

   <Installation folder for VK-64/VK-16> \NVR\1.0\conf
   <<Example>> C:\Program Files\Canon\WebView\NVR\1.0\conf
6. Start up the Storage Server.

Camera Server Maintenance

The information about the latest firmware and backup/restore tools can be obtained on Canon Web site.

Procedure for Updating Camera Firmware

When updating firmware, use proper tools for each model.

1. Obtain the latest firmware including the firmware update tool as well as backup and restore tools for configured values.
2. Save the values configured in the Camera Server by using the backup tool for configured values.
3. Perform the Firmware update by using the firmware update tool.

   If a failure occurs in step 3, restore the settings by using the restore tool for configured values.

9

Troubleshooting

Chapter Overview

This chapter explains the chart of countermeasures against failures, measures to be taken when a trouble occurs (troubleshooting), error messages, and log files.

Troubleshooting for Recording

When a recording trouble occurs when playing back recorded vide data (e.g., data is not found), you can guess the cause by checking the Event Logs of the VK-64/VK-16 and Storage Server Log (re_log).

<table>
<tr><th colspan="2">Log</th><th colspan="2" rowspan="2">Cause</th><th rowspan="2">Countermeasure</th></tr>
<tr><th>Event</th><th>Storage Server</th></tr>
<tr><td rowspan="6">Connection to <Camera Server's IP address> error: Error occurred (<Error No.>: <Description>)
Ex. Connection to 192.168.100.1 error: Error occurred (10060: Connection time-out)</td><td rowspan="6">ERROR (connect) : socket type= (IMAGE/EVENT/COMMAND), cameraserver= (<host>:<port>) win32_error= (<Winsock Error Code>:<Error Message>)</td><td>Error No.</td><td>Description</td><td rowspan="6">Check the network (HUB, cables, etc.) for any problem and confirm that the Camera Server is operating normally.</td></tr>
<tr><td>10050</td><td>Network may be out of service.</td></tr>
<tr><td>10054</td><td rowspan="4">A Camera Server's network problem or session disconnection due to Camera Server's reboot has occurred.</td></tr>
<tr><td>10060</td></tr>
<tr><td>10061</td></tr>
<tr><td>10064</td></tr>
<tr><td>Effective recording rate (<Recording rate before change> → <Recording rate after change> %)
Ex. Effective recording rate (100 → 90.0%)</td><td>Camera <camera> Effective recording rate (y%->z%)
If the following message is also recorded, a large amount of captured data may have been discarded:
● Camera <camera>: <x>/<y> frames discarded due to busy frame queue in last 1 minutes.</td><td colspan="2">The effective recording rate is too low (below 50 %).
● Sensor and motion detection events occur too frequently, exceeding the standard given by the guideline.
● CPU load of the Storage Server PC may be high.</td><td>● Adjust the recording schedule and sensitivity of motion detection.
● Check the CPU usage and terminate any applications which are putting heavy loads to the CPU.</td></tr>
<tr><td>N/A</td><td>Camera <camera>: <x>/<y> frames discarded due to busy drive thread in last 1 minutes.</td><td colspan="2">Load due to writing recorded video data onto HDD may be too high.</td><td>Use the Windows' Performance Monitor to check the writing status of HDD. Review the recording schedule or add servers as required.</td></tr>
<tr><td>N/A</td><td>Camera <camera>: <x>/<y> frames discarded due to busy frame queue in last 1 minutes.</td><td colspan="2">CPU load of the Storage Server PC may be too high.</td><td>● Use the Task Manager to find out the application causing the problem.
● If the VK-64/VK-16 module (AE.EXE) is causing the problem, the event generation frequency may be too high. Try the following:
- Shorten the Maximum retained history setting for the recorded data
- Reduce the number of events to generate
- Add servers to distribute the load.</td></tr>
<tr><td>N/A</td><td>Error writing frame for camera <camera>: <error message>
If the following messages are also recorded, a large amount of captured data may have been discarded:
● Camera <camera>: <x>/<y> frames discarded due to busy frame queue in last 1 minutes.
● Camera <camera>: <x>/<y> frames discarded due to busy drive thread in last 1 minutes.</td><td colspan="2">● The specified drive may be unable to be written.
● The time setting of the VK-64/VK-16 Storage Server PC may have been changed to the past (in the NTP operation environment).</td><td>● Check the drive for recording video data.
● If you are using NTP to adjust time, shorten the synchronization interval with NTP (e.g., 7 days 1 day).</td></tr>
<tr><td>Recording to E:\drive is on standby due to shortage of free HDD space.</td><td>No Storage Server Log</td><td colspan="2">Load due to writing recorded video data onto HDD may be too high.</td><td>Shorten the Maximum retained history or add HDD. Also, review the recording schedule.</td></tr>
</table>

Viewing Screen and Video Windows

This section describes how to solve problems that may occur when you are using VK-64/VK-16.

- Some of the thumbnails are not showing in the Camera Selection Area.

Situation	You do not have enough thumbnails on display to make the scrollbar appear, but some of the thumbnails that were displayed before are no longer shown.
Solution	Most likely you have selected another Zone or Location from the drop-down menu that is further down the list and the thumbnails have been scrolled to the left to show the selected Zone (→ P. 5-31). Check the selected Location and Zone.

- Cannot Pan, Tilt or Zoom a Camera Server in a Video Window.

Situation	You have clicked a Video Window to get Camera Server control, but the shape of the mouse cursor is not changed to operate the Camera Server.
Solution	Double-click the Video Window or select [**Get Camera Control**] from the Video Window menu (→ P. 5-38). Alternatively, check whether recorded video is not being played. If video is not being played, the title bar of the Video Window will be gray, not black (→ P. 5-37).

- The [**Record Now**] feature is gray and disabled in one Video Window menu, however it is enabled in other Video Window menus.

Situation	You have clicked a Video Window to display a Video Window menu and [**Record Now**] is gray (disabled). However, other Video Windows have the function enabled.
Solution	Check if a Camera Server in the Video Window has the setting that disables recording (when the Camera Server was configured, [**Do not Record**] was selected).

- Layouts set up by another user cannot be seen.

Situation	In the [**Organize Layouts & Layout Sequences**] dialog, you have clicked in the [**Personal Layouts**] folder in order to open a Layout created by another user.
Solution	Layouts saved in the [**Personal Layouts**] folder cannot be seen by other users. To show a created Layout to all users, it should be created by a user with Administrator privileges and saved to the [**Shared Layouts**] folder (→ P. 5-19).

- Live and recorded video is not good quality (this does not relate to [**Resolution**]).

Situation	In a Video Window, the live video quality is lower than that of another Video Window and recorded video (when you play back video) is also not good quality.
Solution	The quality of live and recorded video cannot be changed in VK-64/VK-16. The video quality may vary from one Video Window to another because of Camera Server settings. The quality can be changed to a higher one in the admin screens of Camera Servers.

- Recording cannot be performed.

Situation 1) Recording cannot be performed by all of the network cameras.

Situation 2) Recording cannot be performed by a certain network camera.

Solution In the case of 1), check the following:

- ● The network cable of the server is plugged in.
- ● The power supply has been cut off.
- ● [**Do not Record**] is not specified in the [**Special Day Schedule**] settings and others.
- ● Link lamps on the hub (switch) and on the network connector for the server are on.

⇨If the lamps are off, there may be defects in the cable, hub (switch), or network connector for the server.

In the case of 2), check the following:

- ● The power source or network of the Camera Server have no problem.
- ● The ping command succeeds for the network camera.
- ● You can view live video of the Camera Server using VB-C60 Viewer, NC Viewer, PC Viewer or other viewers.
- ● [**Do not Record**] is specified in the [**Special Day Schedule**] settings and others.
- ● Sensor recording or motion detection recording is selected or not.

- Cannot log into a Storage Server from a Viewer.

Situation You cannot log into a Storage Server from a Viewer.

Solution Check the following:

- ● The login user name and password are correct.
- ● The network between the server and the Viewer has no problem.
- ● The IP address of the server to which you want to login is correct.
- ● The ping command succeeds for the server from the Viewer.
- ● When the proxy is configured in Internet Explorer, change the settings to exclude the VK server.

- Cannot view live video.

Situation You cannot view live video.

Solution Check the following:

- ● If "Could not connect to camera" is displayed in the Video Window, check whether the power source of the Camera Server and the network have no problem.
- ● An error is displayed in the Timeline in the Viewer.

⇨If "Connect to <Camera Server IP Address>: Error Occurred" is displayed, check whether the power source of the Camera Server and the network have no problem.

- ● The screen goes black when layout is switched, but video is displayed after a few seconds.

⇨Too many Camera Servers that exceed the performance of your PC are displayed in the Viewer, or a live frame rate that exceeds the performance of your PC is set. Reduce the number of Camera Servers to be displayed, or decrease the live frame rate.

- When a layout sequence is running in the Viewer, the Video Window suddenly goes black and video of the Camera Server cannot be displayed.

Situation	When a layout sequence is running, the Video Window goes black and video of the Camera Server cannot be displayed.
Solution	When many Camera Servers are placed in one layout and a layout sequence is run in a short time, system resources required for communication may run short. Reduce the number of Camera Servers to be displayed in a layout, or make the switching interval for layout sequences longer.

- Viewer operation seems to slow down.

Situation	Viewer operation slows down.
Solution	The performance of a Viewer depends largely on CPU specifications and graphics specifications of the PC on which the Viewer is installed. When Viewer operation slows down, try to reduce the number of Camera Servers to be displayed or decrease a live frame rate. If the video quality of Camera Servers is set high or the resolution is set to VGA, processing may take a long time because the size of image data is large. In this case, review the video quality or video size in the Camera Server settings.

Timeline

- The Playback controls are inactive.

Situation	You have clicked any of the Playback controls but nothing happens.
Solution	Move the Playhead away from the Live position. Playback controls will then be active. A Video Window needs to be selected for playback. Also, the nudge buttons (→ P. 5-48) and the [**Extract Video**] button (→ P. 5-54) are enabled only when one Video Window is selected.

Extract Video

- Cannot save video as no data could be found.

Situation	You have attempted to extract video, but an error message appears stating that no video can be found in the selected segment.
Solution	Check that the selected segment of video has recorded footage (→ P. 5-56).

Scheduling and Recording

- Cannot initiate [**Record Now**] on a camera.

Situation	You have selected a Video Window to initiate [**Record Now**], but the menu option is not available.
Solution	In the [**Edit Camera Server**] dialog of the [**Configuration and Preferences**] screen, [**Do not Record**] is probably set for the Camera Server. Change the option to enable recording to the Storage Server (→ P. 4-20).

- Cannot configure the Camera Server not to record.

Situation	You have attempted to modify the Camera Server and set [**Do not Record**] in the [**Edit Camera Server**] dialog. A message appears stating that the Camera Server is already set up without recording settings.
Solution	In the Camera Server list displayed on the [**Locations/Zones**] tab of the [**Storage and Camera Server Summary**] screen, the selected Camera Server probably has more than one listing. Click the listing which has an associated Storage Server listed beside it and then click [**Remove Camera Server**]. Make sure you save your changes to permanently remove the deleted Camera Server.

- Storage Server free disk space is extremely low.

Situation	Storage Server disk usage is far in excess of the calculated level (→ P. 1-19, P. 3-17) and there is little free space.
Solution	When the Camera Server video quality is set high, there is a large amount of data per frame. Also, if you are using anti-virus software, communication between Storage Servers and Camera Servers is being recorded and that file may be several gigabytes in size. Please alter the anti-virus software settings to eliminate Storage Servers from virus scanning targets.

Connection Problems

- Cannot connect to a Camera Server.

Situation	In the Viewer the screen has gone black and a message appears stating "Could not connect to camera".
Solution	Check whether the network is down, whether the physical connection to the Camera Server is broken, or whether the camera is not powered.

- Cannot connect to a Master Storage Server.

Situation	You have attempted to launch the Viewer and a connection to the Master Storage Server error message appears.
Solution	Check whether the specified Master Storage Server works properly. On the Storage Server computer, open the [**Storage Server Configuration**] utility. If the Storage Server is not running, click [**Start Storage Server**] (→ P. 3-14).

- The [**Configuration and Preferences**] screen takes a long time to open.

Situation	When you switch from the Viewing Screen to the [**Configuration and Preferences**] screen, a message "Please wait" appears and remains on screen for a while.
Solution	Check whether you do not have a lot of Camera Servers to disconnect. Waiting time is dependent on the time required for disconnecting from each Camera Server on the network. It is recommended that you remove non-essential or low priority Camera Servers from your Viewing Screen.

- Fails to connect to Storage Servers when switching to the [**Configuration and Preferences**] screen.

Situation	You have attempted to switch to the [**Configuration and Preferences**] screen and an error message appears stating a failure to connect to a particular Storage Server (name), although it can still connect to the Master Storage Server.
Solution	Check whether the specified Storage Server works properly. A network error may have caused this situation.

Configuration Problems

- Cannot switch to the [**Configuration and Preferences**] screen.

Situation	You have attempted to switch from the Viewing Screen to the Configuration and Preferences screen and an error message appears.
Solution	Only Administrators can access the [**Configuration and Preferences**] screen. Check whether you have Administrator privileges.

- Camera Servers are not displayed in the [**Camera Summary**] window.

Situation	In the list of Camera Servers on the [**Camera Summary**] window, some of the Camera Servers are not displayed.
Solution	Only Camera Servers associated with the item selected on the [**Storage Server**] tab or the [**Locations/Zones**] tab will be shown in the list. Also, if you have the [**Storage Server**] tab displayed, Camera Servers configured as [**Do not Record**] will not be shown.

Upgrade Problems

- Software cannot be upgraded to v2.1.

Situation

When you try to upgrade the software from v1.1, 1.2 or v1.3 to v2.1 after upgrading your OS to Windows Vista/Windows Server 2008, the Storage Server does not stop and installation cannot be completed.

Solution

Follow the procedure below:

1. Right click on the [**Storage Server Configuration**] icon on the desktop, then choose [**Properties**].
2. Click the [**Compatibility**] tab and check the [**Run this program as an administrator**] check box.
3. Double click the [**Storage Server Configuration**] icon to start the Storage Server Configuration tool.
4. Click the [**Stop Storage Server**] button in the [**Storage server status**] field.
5. Click the [**Retry**] button on the installer wizard for VK version 2.1.

Messages List

Operation Messages and Error Messages

Error messages and operation messages displayed during normal recording and operation of VK-64/VK-16 are shown below.

Video Windows Error Messages

	Messages	Cause
Video window	Connecting to camera.	The viewer is in the process of connecting to the camera.
	Could not connect to camera.	The viewer cannot connect to the camera server and the live video cannot be displayed.
	Getting camera control.	The message is displayed before starting camera control after sending a camera control request.
	Can't get camera control.	Another user with higher user authority has already been controlling the camera when you sent a camera control request.
	Control will be lost in <count down> sec.	If the camera is left uncontrolled for 30 seconds, this message is displayed and a countdown starts. It counts down starting from 10 to 0 by 1 second.
	Camera control lost.	Time out occurred while the viewer is controlling the camera or a camera control request was sent from another user with higher user authority. This message will close in three seconds.
	No recorded video.	No recorded video exists during the time where the Playhead is positioned now, when playing recorded video.
	Can't connect to storage server.	It is unable to connect to the storage server to play recorded video.
	Not set up to record.	You attempted to play recorded video with the camera set to [Do not Record]
	Please wait	It may take time until the MPEG-4 live/recorded video is displayed. This message will close in several seconds.

Storage Server Configuration Error Messages

	Messages	Cause
Login settings	This account does not have the right to logon as services. Please check the rights by the "Local Security Policy Editor" of "Windows". The service's account is changed to "Local system account".	You logged in using an account that does not have administrator privileges.
Event notification	The recipient's e-mail address contains invalid characters.	A character other than alphanumeric characters and underscore (_) was entered in the address of the recipient.
	The recipient's e-mail address field must not be empty.	The address of the recipient was not entered.
	The sender's e-mail address contains invalid characters.	A character other than alphanumeric characters and underscore (_) was entered in the address of the sender.
	The sender's e-mail address field must not be empty.	The address of the sender was not entered.
	The SMTP host name is invalid.	The host name of the SMTP server contains an invalid character.
	The SMTP host name must not be empty.	The host name of the SMTP server was not entered.
	The SMTP port must be a number between 1 and 65535.	The port number of an invalid SMTP server was used.
	The user name must be between 1 and 100 characters in length.	The user name was out of the valid number of characters range (This includes when the user name was not entered).
	The user name contains invalid characters.	An invalid character was entered in the user name.
	The password must be between 1 and 20 characters in length.	The password was out of the valid number of characters range (This includes when the password was not entered).
	The password contains invalid characters.	An invalid character was entered in the password. Only alphanumeric characters and underscore (_) can be used.
	The POP host name is invalid.	An invalid character was entered in the host name of the POP server.
	The POP host name must not be empty.	The host name of the POP server was not entered.
	The POP port must be a number between 1 and 65535.	The port number of an invalid POP server was used.

	Messages	Cause
User management	An account with this user name already exists.	An attempt was made to add a user in the Storage Server by using a user name that is already registered.
	The user name contains invalid characters.	An attempt was made to add a user by entering a user name that contains a character other than alphanumeric characters and underscore (_).
	The password contains invalid characters. Valid characters include all alphanumeric characters and '_'.	An attempt was made to add a user by entering a password that contains a character other than alphanumeric characters and underscore (_).
	Please ensure that the password and confirmation match exactly.	An attempt was made to add a user by entering a password in the [**Confirm Password**] field, which does not match the entered password.
	Are you sure you wish to remove this user?	An attempt was made to delete the user.
Configuration	The storage server name must be between 1 and 20 characters in length.	The Storage Server name was out of the valid number of characters range (This includes when the Storage Server name was not entered).
	The proxy host name must not be empty.	The host name of the proxy server was not entered.
	The proxy host name is invalid.	The host name of an invalid proxy server was used.
	The proxy port must be a number between 1 and 65535.	The port number of an invalid proxy server was used.
	Proxy settings changed. Do you wish to restart the recording server?	The proxy server settings have changed.
	The maximum retained history field must not be empty.	The value of the maximum retention period was not entered.
	The maximum retained history must be greater than or equal to 1 day.	An attempt was made to configure the maximum retention period using a value of less than 1 day.
	The maximum file size or duration field must not be empty.	The value of the maximum file size/duration was not entered.
	The maximum file size must be less than or equal to 1024 MB.	An attempt was made to configure the maximum file size using a value larger than 1024MB.
	The maximum file size must be greater than or equal to 32 MB.	An attempt was made to configure the maximum file size using a value less than 32MB.

	Messages	Cause
Configuration	The maximum file time must be less than or equal to 24 hours.	An attempt was made to configure the maximum file duration using a value larger than 24 hours.
	The maximum file time must be greater than or equal to 1 hour.	An attempt was made to configure the maximum file size using a value less than 1 hour.
	The maximum disk space used field must not be empty.	The value of the maximum disk space used was not entered.
	The maximum disk space used must be greater than or equal to 32 MB.	An attempt was made to configure the maximum disk space used using a value less than 32MB.
	The low disk space warning level must not be empty.	The value of the low disk space warning level was not entered.
When exiting the application or approving the change in all tabs	The following error occurred saving the configuration file.	An error occurred while saving the Storage Server settings.
	The following error occurred writing the user file.	An error occurred while saving the user management information (the users.txt file).
	The new retained history settings may result in the deletion of some existing video files. Do you wish to continue?	The maximum retention period was changed to a shorter period.
	Do you wish to save your changes?	An attempt was made to exit the application without saving the setting change.
All tabs	Initialization of network communication has failed.	Communication initialization was interfered with due to an internal program or OS error that occurred when the Storage Server installation was activated.

Viewer Confirmation Messages

The < > part of the message differs depending on the situation.

	Messages	Cause
Registering Storage Servers and Camera Servers	Are you sure you want to delete camera server '<camera server name>'?	An attempt was made to delete the camera server.
Another Add Camera Server dialog	Proceeding will delete any schedules associated with the following : '<camera number>'. Click Yes to proceed, No to reconsider.	When you attempted to edit the VB150 settings, it was detected that the camera configuration has been changed on the VB150 side and the camera for which the schedule was configured no longer exists.
Saving/ Managing Video Layouts	This will replace an existing layout of the same name. Are you sure?	An attempt was made to save the current layout using the same name as a layout that already exists.
	Are you sure you want to delete the selected layout? '<Layout name>'	An attempt was made to delete the layout.
	Are you sure you want to delete the selected folder, including layouts and layout sequences within the folder? <Folder name>	An attempt was made to delete the layout folder.

Viewer Warning Messages

	Messages	Cause
Add Recording Schedule	The audio transmission function of the camera is not available. Please confirm the camera settings.	The audio transmission function of the camera is disabled.
	A setup of the stream for recording is applied only to the JPEG recording not more than maximum frame rate 10fps. It is applied to neither JPEG recording of 10 or more fps nor MPEG-4 recording.	You attempted to apply video recording stream settings to high rate JPEG video or MPEG-4 video.
	MPEG-4 recording with Preset Tour could consume disk space rapidly. Do you wish to continue?	The data volume of MPEG-4 video becomes several times bigger if the video contains a lot of motion of subjects. You need attention when using Preset Tour together with MPEG-4 recording, as a whole image moves during Preset Tour.
Motion Detection Dialog	The motion detection setting tool cannot be started because the user of the camera is not a manager.	A non-Administrator user attempted to start up the [**Motion Detection Setting**] dialog.
Preset Tour Settings	Attention: The current Preset Tour settings might require you to repair the Pan/Tilt machine soon. Please note that the repair of consumable mechanical parts such as the Pan/Tilt machine may not be covered by the guarantee. Recommended Preset Tour settings to reduce the machine load: ● Change the Preset Tour duration within <hh> : <nn> at the [Start Time] and [End Time] setting. ● Adjust the Preset Tour configuration so that the total amount of camera movement (angle/time) becomes small. ● Set the pause time to the preset position longer than the Pause (sec) setting. Click the [Cancel] button to return to the setting screen.	The configured settings exceed the endurance limit of 100,000 pans and tilts (300,000 for the VB-C60) within one year on the VB-C50i or VB-C300.

Viewer Error Messages

The < > part of the message differs depending on the situation.

	Messages	Cause
Starting the Viewer	Failed to connect to Master Storage Server. Please check the details and try again.	An attempt was made to start the Viewer, however a connection to the specified Master Storage Server could not be established.
	Failed to connect to Master Storage Server <IP address of Storage Server> because of version mismatch.	You attempted to connect to an older version (v1.1 or earlier) of the Storage Server as the Master Storage Server. Alternately, you attempted to connect to a v2.1 Master Storage Server from an older version (v1.2, v1.3, v1.4, or v2.0) Viewer.
	Recording settings for camera servers on the storage server ('<Storage Server Name>') will not be available. Version mismatch.	You attempted to connect to an older version (v1.1 or earlier) of the Storage Server as a Slave Storage Server. Alternately, you attempted to connect an older version (v1.2, v1.3, v1.4, or v2.0) Viewer to a v2.1 Slave Storage Server.
Configuration and Preferences screen	Only administrators may configure the system.	An attempt was made by a user without the administrator privilege to switch to the Configuration window.
	Recording settings for camera servers on the storage server ('<Storage Server Name>') will not be available. <Cause of the error>	A connection to a Storage Server other than the Master Storage Server failed when you accessed the [**Configuration and Preferences**] screen.
	The changes you are trying to save cannot be sent to the storage server ('<Storage Server Name>') and will be lost.	An attempt was made to save the changes in the Camera Server list in the [**Configuration and Preferences**] screen, however a connection to the Storage Server could not be established.
	The configuration on the Master Storage Server has been modified by another administrator. Please restart your Viewer. Changes you have made to thumbnails, locations, zones and camera names have not been saved.	An attempt was made to save the changes in the Camera Server list, however another administrator has conducted changes.
	The configuration on the Master Storage Server has been modified by another administrator. Please restart your Viewer.	Another administrator changed the Master Storage Server settings while the Camera Server list was displayed.

	Messages	Cause
Adding/ Editing/ Deleting the Storage Server	You cannot assign this name to a Storage Server.	An attempt was made to register a Storage Server by specifying a loop back host/ address ("local host", "127.0.0.1" or "localhostlocaldomain").
	This storage server has already been added. Please check your settings and try again.	An attempt was made to add a Storage Server that has been already registered.
	The Master Storage Server cannot be edited.	An attempt was made to edit the Master Storage Server.
	Please save or discard your changes before changing your Storage Server settings.	An attempt was made to change/delete the Storage Server while there are camera server settings that have not been saved.
	The Master Storage Server cannot be deleted.	An attempt was made to delete the Master Storage Server.
	The storage server host name is invalid. Please specify a valid host name or IP address.	The host name or IP address was invalid when [OK] was pressed.
	The storage server port is invalid. Please specify a value between 1 and 65535.	The port number was invalid when [OK] was pressed.
	The Storage Server host name cannot be blank.	An attempt was made to add or edit a zone in the Storage Server without entering the name.
Adding/Editing a Location and Zone	A location with this name already exists. Please use a different name and try again.	An attempt was made to register a location name that is already registered.
	A location cannot have an empty name. Please specify a name and try again.	An attempt was made to register a location without entering the name.
	This location has zones in it. Please remove these before deleting the location.	An attempt was made to delete the location for which a zone has been added.
	Please select a location for this zone	An attempt was made to add a zone while the location has not been registered.
	A zone with this name already exists in this location. Please use a different name and try again.	An attempt was made to add a zone with a name that has been already registered.
	A zone cannot have an empty name. Please specify a name and try again.	An attempt was made to register a zone without entering the name.
	This zone has camera servers in it. Please remove these before deleting the zone.	An attempt was made to delete the zone for which a camera server has been added.

	Messages	Cause
Adding a Camera Server	This camera server has already been set up to record to the selected storage server. Please check your settings and try again.	Even though video of a camera server is configured to be recorded in the Storage Server, the IP address and port used are the same as the camera server that has been configured in the Storage Server.
	Please select a location and a zone.	An attempt was made to add a camera server without selecting a location and zone.
	Please select a location and a zone. '<Camera number>'	An attempt was made to add a camera server without selecting a location and zone. This is displayed when VB150 is in the [**simultaneous**] mode and multiple cameras are connected.
	A camera server with the same host name and port is currently queued for deletion. You must save changes before adding this camera server.	After deleting the camera server, an attempt was made to add the camera server again when the changes have not been saved.
	The camera server host name for live viewing is invalid. Please specify a valid host name or IP address.	An attempt was made to connect with an invalid host name/IP address.
	The camera server port for live viewing is invalid. Please specify a value between 1 and 65535.	An attempt was made to connect with an invalid port number.
	The camera server host name for the storage server is invalid. Please specify a valid host name or IP address.	An attempt was made to connect to the Storage Server with an invalid host name/IP address.
	The camera server port for the storage server is invalid. Please specify a value between 1 and 65535.	An attempt was made to connect to the Storage Server with an invalid port number.
Recording Schedule	There has been a problem modifying schedule day "<schedule name>" for camera "<camera name>" on storage server "<storage server name>". This change may not have been reflected on the storage server.	The destination Storage Server was not found when you attempted to save the schedule.
	There has been a problem deleting schedule day "<schedule name>" from camera "<camera name>" on storage server "<storage server name>". This change may not have been reflected on the storage server.	The destination Storage Server was not found when you attempted to delete the schedule.
	There has been a problem retrieving schedules from storage server "<storage server name>".	The Storage Server in which the schedule is to be saved was not found when you attempted to display the [**Recording Schedules**] window or to switch the Storage Server.

	Messages	Cause
Recording Schedule	This schedule item overlaps a previously scheduled item. Please check your settings and try again.	The recording schedules are overlapping.
	Schedule items must be at least 15 minutes long. Please check your settings and try again.	An attempt was made to register a schedule with a shorter period than 15 minutes.
	Do you want to save your schedule changes?	An attempt was made to close the Normal or Special Day Schedule screen without saving the change.
	The following cameras will not be part of this multiple schedule creation because they have schedules that clash with the requested time range :	The Recording Schedules window was dragged in order to add multiple recording schedules, however the camera server for which a schedule has already been configured exists.
	Multiple schedule creation failed - all selected cameras have schedules that clash with the new schedule time range.	A layout or layout sequence with the same name exists in the folder to which the layout or layout sequence is moved or copied.
	At least one type of recording must be selected.	You turned the audio recording mode on when all of the video recording modes were off.
	If you select "Custom" in the Preset drop-down menu, you cannot use digital zoom.	You attempted to operate the digital zoom region of the VB-C60 while [Custom] was selected.
Special Day Schedule	This schedule type has days set up for it to be used on. These need to be removed before deleting the schedule type.	An attempt was made to delete the special day schedule that is planned to execute.
	This day has already been set up to use another schedule type (<special day schedule name>). To use a different schedule type, the day needs to be deleted from the other schedule type first.	An attempt was made to use the data for which another special day schedule is already configured.
	Special day schedules start from 0000 and end at 2400. Please adjust the end time for this schedule and try again.	An attempt was made to register a schedule that passes 24:00.
	A schedule with this name already exists. Please use a different name and try again.	An attempt was made to add a special day schedule with a name that is already registered.

	Messages	Cause
Viewing Screen	Communication with the Storage Server (<storage server name>) has failed. To ensure that event and video data is available from this storage server, identify and resolve the problem and then press 'OK' to reconnect to the Storage Server. If you press 'Cancel' then some event data, including all future events, for camera servers recording to this Storage Server will not be available.	When displaying the Viewing Screen, the Viewer connects to a Storage Server. An error occurred during this process. When multiple Storage Servers are registered, the Viewing Screen may be displayed for each of the servers.
	The following layouts cannot be found and have been removed from this layout sequence : <layout name> Click OK to continue viewing this sequence.	There is a layout that can only be seen while the layout sequence is being executed, and the user has the right to edit the layout sequence.
	The following layouts cannot be found. Contact your system administrator to have these removed from the sequence : <layout name> Click OK to continue viewing this sequence.	The shared layout sequence was started, however there is a layout that cannot be seen and the user does not have the administrator privilege.
	None of the layouts in this sequence can be found.	The shared layout sequence was started, however there are no layouts that can be seen and the user does not have the administrator privilege.
	None of the layouts in this sequence can be found. Click OK to edit this sequence or Cancel to return to the previous layout.	The layout sequence was started, however there are no layouts that can be seen. The right to edit the layout sequence is possessed.
	Only administrators may configure the system.	An attempt was made by a user other than an administrator to switch to the Configuration window.
	Do you want to save changes to this layout?	An attempt was made to close a layout that has been changed.
	The image could not be saved.	A still image was captured using snapshot but it could not be saved.
	Could not save video because there was no data to record.	There are no recorded videos for the selected segment thus they could not be saved.

	Messages	Cause
Viewing Screen	Failed to trigger manual recording for camera "<camera name>" on storage server "<storage server name>". *The following message is added when the number of camera servers exceeds the licensing restrictions. Number of licenses exceeded.	Manual recording could not be started.
	This will replace an existing layout of the same name. Are you sure?	An attempt was made to save the layout sequence in the folder using a name that is already been registered as a layout or layout sequence.
		An attempt was made to save the layout sequence with a name that is already being used for a layout or layout sequence in the destination folder.
	The number of MPEG-4 video windows exceeds 20. Do you wish to switch this video window to display MPEG-4?	The number of videos where MPEG-4 was selected as the [**Selection of receiving image**] exceeds 20.
Saving/ Managing Video Layouts	You cannot delete <layout name> because it is the current layout or it contains the current layout or layout sequence.	An attempt was made to delete a layout that is currently being used.
	You must enter a non blank name. Please check your settings and try again.	An attempt was made to add a layout folder without entering the name.
Menu Buttons	The image could not be saved.	An error occurred when you attempted to capture a snapshot in the Video Window.
Extracting Video	Could not save video because there was no data to record.	There are no recorded videos for the selected segment thus they could not be saved.
	The image could not be saved.	The Windows folder or Program Files folder was specified as the destination folder for still frames or MOV files.

	Messages	Cause
Adding/Editing a Camera Server	This camera server has already been set up without recording. Please check your settings and try again.	When a camera server configured as [**Do not record**] is already added, an attempt was made to add or edit a camera server using the same hot name/IP address and port number.
	Connection to the camera server could not be established. Please verify that the host name or IP address, user name, and password are correct. '<Communication Error Messages - Details>'	Could not connect to the camera server.
	The storage server of this version does not support the specified camera.	You attempted to register VB-C500D, VB-C60 or VB-C300 with an older version of the Storage Server.
Add/Edit Camera Server dialog, Add/Edit Recording Schedule dialog, Motion Detection Settings dialog, Sensor Event Settings dialog	Connection to the camera server has been lost.	An error relating to the camera server connection occurred.
	Failed to connect a camera server.	An unknown error relating to the camera server connection occurred.
Add/Edit Recording Schedule dialog	At least one day must be selected.	[**OK**] was pressed without specifying the weekday.
	At least one type of recording must be selected.	[**OK**] was pressed without selecting the recording mode check box.
	The recording frame rate must be between <fps> and <fps>.	An invalid recording frame rate was entered.
Add/Edit Recording Schedule dialog, Motion Detection Settings dialog	The pre-event time must be no greater than 30.	[**OK**] was pressed after configuring a value exceeding 30 seconds for the pre-event time value.

	Messages	Cause
Camera Summary window	The changes you are trying to save cannot be sent to the storage server (<storage server name>) and will be lost. '<Communication Error Messages - Details>'	An error occurred while saving the settings in the Camera Summary window.
	Are you sure you want to delete storage server '<storage server name>'?	An attempt was made to delete a Storage Server other than the Master Storage Server.
	Are you sure you want to delete location '<location name>'?	An attempt was made to delete the location.
	Are you sure you want to delete zone '<zone name>'?	An attempt was made to delete the zone.
	Are you sure you want to delete camera server '<camera server name>'?	An attempt was made to delete the camera server.
	Do you want to save your configuration changes?	An attempt was made to close the [**Camera Summary**] window without saving the changes.
	There has been an error saving the configuration on the Master Storage Server.	An attempt was made to save the settings, however, saving the Master Storage Server settings failed.
Connect to Master Storage Server dialog, Connection Error dialog	The master storage server host name is invalid. Please specify a valid host name or IP address.	An attempt was made to connect with an invalid host name/IP address.
	The master storage server port is invalid. Please specify a value between 1 and 65535.	An attempt was made to connect with an invalid port number.
Edit Camera Server dialog	Proceeding will delete any schedules associated with the following : <camera server name>. Click Yes to proceed, No to reconsider.	[**OK**] was pressed in the [**Edit Camera Server**] dialog when a change was made to the camera registered in the camera server.
Event Search dialog	There are no events to display	No events to be displayed in Event Search were found.
Extract Video dialog	The length of the extracted video may not exceed 1 hour.	An attempt was made to configure the time using a value longer than 1 hour.
	Could not save video because there was no data to record.	The recorded video at the specified time cannot be read.
	Failed to extract the video after <hh>:<nn>:<ss> because two or more MPEG-4 tracks are included in the selected time period.	You attempted to use [**Extract Video**] to save recorded video for a time range that spans two or more MPEG-4 recording schedules.
Folder Name dialog	You must enter a non blank name. Please check your settings and try again.	An attempt was made to add a layout folder without entering the name.

	Messages	Cause
Layout Sequence dialog	Shared layout sequences may not contain personal layouts. The following layouts must be removed before the layout can be saved as a shared layout sequence :	An attempt was made to change the layout sequence that contains a personal layout sequence to a shared layout sequence.
Motion Detection Settings dialog	The analysis frame rate must be between <fps> and <fps>.	An invalid value was selected for the motion detection frame rate.
	The recording frame rate must be between <fps> and <fps>	An invalid value was selected for the motion detection recording frame rate.
Normal or Special Day Schedule window and Add/Edit Camera Server dialog	Recording settings for camera servers on the storage server (<storage server name>) will not be available. '<Communication Error Messages - Details>'	An error occurred while connecting to the Storage Server, when the Normal or Special Day Schedule window is opened or the Storage Server in the Recording Schedules window is changed. Or, a communication error occurred when you were adding/ editing a Storage Server.
Organize Layouts & Layout Sequences dialog	This will replace the current layout. Are you sure?	There is a layout with the same name in the destination to which the layout is moved and the name is the same as the layout that is being currently used.
	You cannot delete <layout name> because it is the current layout or it contains the current layout or layout sequence.	An attempt was made to delete the current layout or the folder that contains the current layout or layout sequence.
	Are you sure you want to delete the selected layout? <layout name>	An attempt was made to delete a layout that is not currently being used.
	Are you sure you want to delete the selected folder, including layouts and layout sequences within the folder? <layout name>	An attempt was made to delete the layout folder.
	Are you sure you want to delete the selected layout sequence?	An attempt was made to delete the layout sequence.
	You cannot delete <layout name> because it is the current layout sequence.	An attempt was made to delete a layout that is registered in the current layout sequence.
	You cannot overwrite <layout name> because it is used by the current layout sequence.	An attempt was made to change or overwrite the layout that is being used in the currently active layout sequence.
	Unable to create folder. The name '<folder name>' already exists.	An attempt was made to create a new folder with a name that is already being used.

	Messages	Cause
Organize Layouts & Layout Sequences dialog	Unable to change layout name. The name '<layout name>' already exists.	An attempt was made to change the name of a layout or layout sequence to a name that is already being used.
	Unable to change layout folder name. The name '<folder name>' already exists.	An attempt was made to change the name of a folder to a name that is already being used.
	This will replace an existing layout of the same name. Are you sure?	A layout or layout sequence with the same name exists in the folder to which the layout or layout sequence is moved or copied.
	The layout or the folder of the same name has already been registered.	A folder with the same name as the folder to which the layout or layout sequence is moved or copied exists. Or, a layout or layout sequence with the same name exists in the folder to which the folder is moved or copied.
	You cannot delete <layout sequence name> because it is the current layout sequence.	An attempt was made to delete the current layout sequence.
Sensor Event Settings dialog	The recording frame rate for sensor <sensor name> must be between 0.1fps and 30fps.	An invalid recording frame rate was entered.
Sensor Settings dialog	The pre-event time for sensor <sensor name> must be no greater than 30.	[OK] was pressed after configuring a value exceeding 30 seconds for the pre-event time value.
Viewer Settings window	Do you want to save your Viewer Settings changes?	An attempt was made to close the Viewing Screen without saving the changes.

VK-64/VK-16 Recording Engine Logs

A list of messages shown in the Storage Server log file **nvr_re_log_<N>.txt** (<N> is either 0 or 1) is shown below. These messages are generated by the recording engine (Win32 service) that runs as part of a Storage Server.

Messages	Cause	Action
Camera <camera>: <x>/<y> frames discarded due to busy drive thread in last 1 minutes.	x frames out of y frames are discarded because there were a large number of frames that have been requested to be written in the disk. It is difficult for the current settings of the recording engine to process this amount of tasks. This message is recorded when recording failure occurs when disk is under a heavy load.	Reduce the system load using the following methods. 1. Reduce the amount of data to record (For example, lower the resolution or frame rate). 2. Install an additional hard disk. 3. Implement an action such as upgrading the CPU, or increasing memory or existing hard disk space.
Camera <camera>: <x>/<y> frames discarded due to busy frame queue in last 1 minutes.	x frames out of y frames are discarded because there were a large number of unprocessed frames. It may be that CPU or hard disk drive is unable to process data at the same speed rate as the data reception. This message is recorded when recording failure occurs due to motion detection or too many event occurrences.	Reduce the system load using the following methods. 1. Reduce the amount of data to record (For example, lower the resolution or frame rate). 2. Install an additional hard disk. 3. Implement an action such as upgrading the CPU, or increasing memory or existing hard disk space.
Error resolving name for POP server host: port Error: <Winsock error code>: <Error message>	When sending E-mail, the recording engine could not resolve the host name of the POP server.	See the corresponding Winsock error code in "Error Codes in Log File" (→ P. 9-30).
Error connecting socket for POP server host: port Error: <Winsock error code>: <Error message>	When sending E-mail, the recording engine could not connect to the POP server.	See the corresponding Winsock error code in "Error Codes in Log File" (→ P. 9-30).
POP connection error: 0 POP response: <pop response>	When sending E-mail, an error occurred in the first response sent after connecting to the POP server.	See "Error Codes in Log File" (→ P. 9-30).
POP user error: 0 POP response: <pop response>	When sending E-mail, the user name entered for the POP server could not be authenticated.	Check the Storage Server configuration to see if the entered user name is correct.
POP password error: 0 POP response: <pop response>	When sending E-mail, the password entered for the POP server could not be verified.	Check the Storage Server configuration to see if the entered password is correct.

Messages	Cause	Action
Error resolving name for SMTP server host: port Error: <Winsock error code>: <Error message>	When sending E-mail, the recording engine could not resolve the host name of the SMTP server.	See the corresponding Winsock error code in "Error Codes in Log File" (→ P. 9-30).
Error connecting SMTP to server host: port Error: <Winsock error code>: <Error message>	When sending E-mail, the recording engine could not connect to the SMTP server.	See the corresponding Winsock error code in "Error Codes in Log File" (→ P. 9-30).
Error sending E-mail. SMTP server log follows: <SMTP error message>	The recording engine could not send E-mail due to a communication error with the SMTP server. Please see the SMTP server log for details.	See the corresponding SMTP error code in "Error Codes in Log File" (→ P. 9-30).
NVR recording engine stopping	This is always displayed when the recording engine stops.	No action is required.
NVR Recording Engine startup complete. Log level = (<log level>)	This is always displayed when the recording engine starts. The value in **Log Level** indicates the log level that is currently being configured (The default is 1).	No action is required.
Unable to register a drive for camera <host>:<port>.	The storage destination drive configured for this camera server has been deleted.	Change the storage destination drive of the camera server in [**Configuration**] of the Viewer.
Error deleting old file <windows error message>.	A system error occurred when deleting the file. This file is probably being used by the access engine or other application. When this file is being used for playing a recorded video, this error is normal.	There is no necessary action.
Error writing frame for camera <camera>: <error message>	Cannot write data in the hard disk.	Check to ensure that the specified drive is not configured as read-only. In addition, ensure that all directories in this path are writable. When the drive cannot be used due to the above reason, configure it in a way so that there are no camera servers records on this drive. *This is also recorded when the date & time of the PC is reset to past. When this occurs, this error will no longer be recorded when the date and time is reset to the current date and time.

Messages	Cause	Action
ERROR(timeout): socket type=(IMAGE/ EVENT/ COMMAND), cameraserver=(<host>:<port>)	A timeout occurred while waiting for a response from the specified camera server. This normally occurs when the camera server is offline. IMAGE == Get image process EVENT == Get camera server status process implemented by GetNotice COMMAND == Camera server operation/configuration change command process	Check to ensure that the camera server is on and connected to the network. If a proxy server is configured using the Storage Server Configuration tool, check to ensure that the proxy server is running.
ERROR(connect): socket type=(IMAGE/ EVENT/ COMMAND), cameraserver=(<host>:<port>) win32_error=(<Winsock error code>: <error message>)	An error occurred when connecting to the specified camera server. IMAGE == Get image process EVENT == Get camera server status process implemented by GetNotice COMMAND == Camera server operation/configuration change command process * same applies for "ERROR (WSAConnect)".	See the corresponding Winsock error code in "Error Codes in Log File" (→ P. 9-30).
ERROR(http): socket type=(IMAGE/ EVENT/ COMMAND), cameraserver=(<host>:<port>) http_status=(<HTTP error code>)	An HTTP error occurred when connecting to the camera server. IMAGE == Get image process EVENT == Get camera server status process implemented by GetNotice COMMAND == Camera server operation/configuration change command process	See the corresponding HTTP error code in "Error Codes in Log File" (→ P. 9-30).
Failed to write camera configuration file	Cannot overwrite the camera server configuration file. The setting changes conducted after the recording engine started cannot be saved.	Check to ensure that you have the write privilege for the LocalSystem account in the VK-64/VK-16 configuration directory.
ERROR: Out of memory -- please check configuration of this PC	Failed to reserve memory in the recording engine since the system memory is under a heavy load because unprocessed frames continued to increase. An application error will occur in a few seconds and the Storage Server functions will stop.	Reduce the system load using the following methods. 1. Reduce the amount of data to record (For example, lower the resolution or frame rate). 2. Install an additional hard disk. 3. Implement an action such as upgrading the CPU, or increasing memory or existing hard disk space.

Messages	Cause	Action
Camera <camera> Effective recording rate (<y>% -> <z>%)	The recording frame rate has been changed from y% to z% because the load of the recording engine continued to increase (decrease).	Even though there is no necessary action, you can reduce the system load using the following methods if you want to avoid frame rate decrease events. 1. Reduce the amount of data to record (For example, lower the resolution or frame rate). 2. Install an additional hard disk. 3. Implement an action such as upgrading the CPU, or increasing memory or existing hard disk space.
ERROR(http): socket type= (Image), cameraserver= (<host>:<port>) http_status=400	An HTTP 400 error occurred when getting the image.	It may be connected to SNC-P5, DF40N in the MPEG mode. Change it to the JPEG mode. For other causes, see the corresponding HTTP error code in "Error Codes in Log File" (→ P. 9-30).
Failed to start the recording-mode stream for Camera <IP address of camera>.	Recording video stream requests were made to the VB-C500D/VB-C60 from multiple Storage Servers.	Change the settings such that the recording video stream request is only made by one unit.

Access Engine Log

A list of messages shown in the Storage Server log file **nvr_ae_log_<N>.txt** (<N> is either 0 or 1) is shown below. These messages are generated by the access engine (Win32 service) that runs as part of a Storage Server.

Messages	Cause	Action
NVR Access Engine startup complete. Log level = <log level>	It indicates that startup of the access engine has been completed.	No action is required.
NVR Access Engine has finished shutting down.	The access engine has been stopped.	No action is required.

VK-64/VK-16 Viewer Logs

A list of messages shown in the VK Viewer log file **nvr_viewer_log_<N>.txt** (<N> is either 0 or 1) is shown below.

Messages	Cause	Action
CHttpVbSetngThread: inet error=<wininet error code>, winsock error=<Winsock error code>, count=<Number of occurrences>	A network error occurred while communicating with the camera server (This is recorded when a problem occurs in configuration protocol communications).	See the corresponding Winsock error code in "Error Codes in Log File" (→ P. 9-30).
vbc_HttpCommand:inet error=<wininet error code>, winsock error=<Winsock error code>, count=<Number of occurrences>	A network error occurred while communicating with the camera server (This is recorded when a problem occurs in WV-HTTP protocol communications).	See the corresponding Winsock error code in "Error Codes in Log File" (→ P. 9-30).

Log Storage Destination

- The Storage Server logs are stored in the following folder in the PC where the Storage Server is installed.

  For Windows Vista/Windows Server 2008

  <System drive>:\ProgramData\Canon\Webview\NVR

  For OS other than Windows Vista/Windows Server 2008

  <System drive>:\Documents and Settings\All Users\Application Data\Canon\Webview\NVR\logs

- The Apache logs used by the Storage Server are stored in the following Storage Server installed folder.

  <Storage server installed folder>:\websrvr\logs\

- The Viewer logs are stored in the following folder in the PC where the Viewer is installed.

  For Windows Vista/Windows Server 2008

  <System drive>:\ProgramData\Canon\Webview\NVR

  For OS other than Windows Vista/Windows Server 2008

  <System drive>:\Documents and Settings\All Users\Application Data\Canon\Webview\NVR\logs

Error Codes in Log File

Winsock Error Codes

Codes	Error Messages	Description
10038	An operation was attempted on something that is not a socket.	This may be recorded in Version 1.1, however, there is no necessary action.
10048	Only one usage of each socket address (protocol/network address/port) is normally permitted.	All resources for communication are being used. This frequently occurs when a black screen problem occurs in Viewer layout sequences.
10050	A socket operation encountered a dead network.	This occurs when the PC recognizes that the network is not available because the closest router or Hub to the PC is powered off. Normally, this cannot be recognized, therefore it is rare that this error is reported.
10051	A socket operation was attempted to an unreachable network.	This occurs when another network device recognizes that the network is not available because the router or Hub is powered off. Normally, this cannot be recognized, therefore it is rare that this error is reported.
10054	An existing connection was forcibly closed by the remote host.	The connection is disconnected by the camera server due to camera server restart or other cause. This may occur when the camera server is restarted using the restart button on the configuration page on the software-side. However, this rarely occurs.
10060	A connection attempt failed because the connected party did not properly respond after a period of time, or established connection failed because connected host has failed to respond.	A timeout occurred in the TCP connection with the camera server (This occurs when the camera server is down).
10061	No connection could be made because the target machine actively refused it.	The camera server rejected the TCP connection (This occurs when the port number specification is incorrect or other cause).
10064	A socket operation failed because the destination host was down.	This is recorded when the camera server is down (Normally, 10060 occurs).
10065	A socket operation was attempted to an unreachable host.	There are no routes to connect to the camera server (This may also occur when there is a failure in the network cable connected to the PC or HUB).

Codes	Error Messages	Description
10091	WSAStartup cannot function at this time because the underlying system it uses to provide network services is currently unavailable.	There is a failure on the PC network board.
11001	No such host is known.	The host name in DNS could not be resolved.
11004	The requested name is valid, but no data of the requested type was found.	The host name in DNS could not be resolved (11004 may occur instead of 11001 in 2003).

SMTP Error Codes

Codes	Error Messages	Description
421	<domain> Service not available, closing transmission channel	The communication is terminated because the mail server stopped.
450	Requested mail action not taken: mailbox unavailable	The requested mail process was not executed because the mailbox is not available.
451	Requested action aborted: local error in processing	The requested execution was canceled because an error occurred in the mail server.
502	Command not implemented	The mail server does not support the command that was sent.
550	Requested action not taken: mailbox unavailable	The request was not executed because the mailbox is not available.

HTTP Error Codes

Codes	Error Messages	Description
400	Bad Request	When more than 4 Storage Servers are connected when a Sony camera is used. This is recorded when the operation mode of the camera server is mpeg4.
401	Unauthorized	The user authentication or password for connecting to the camera server is incorrect.
403	Forbidden	This is recorded when the connection cannot be established due to the IP address restriction on the camera server side (It may also be returned by the proxy server).
500	Internal Server Error	This occurs when the webview server is not running even when the HTTP server is running. This may also be recorded even during normal operation if the camera server is restarted.
502	Bad Gateway	This is recorded when the proxy server returned an HTTP 502 error (which occurs when the proxy server receives an error from the upper proxy).

Codes	Error Messages	Description
503	Service Unavailable	This occurs when the camera server is temporarily unable to process requests due to server overload (excessive requests from multiple clients), an uncompleted start-up process on the camera server, or other reasons. This is recorded when the proxy server returned an HTTP 503 error (which occurs when the proxy server failed to connect to the camera server).
504	Gateway Time-out	This is recorded when the proxy server returned an HTTP 504 error (which occurs when the proxy server could not receive a reply from the upper proxy).

Wininet Error Codes

Codes	Error Messages	Description
12002	The request has timed out.	A request timeout occurred. It indicates that connection or request transmission failed.
12005	The URL is invalid.	The URL is incorrect (Normally, this does not occur, however, it may occur when an attempt is made to connect to an unsupported camera server).
12007	The server name could not be resolved.	The host name could not be resolved (This error indicates when a host name that is not registered in DNS is specified or that a problem occurred in communication with DNS).
12017	The operation was canceled, usually because the handle on which the request was operating was closed before the operation completed.	The communication was canceled (This error is not a problem, it may be recording during normal operation).
12029	The attempt to connect to the server failed.	The connection to the camera server failed (Normally 12002 is recorded).
12030	The connection with the server has been terminated.	The connection to the camera server has been disconnected (The disconnect process itself is recorded when it is executed normally).
12031	The connection with the server has been reset.	The connection to the camera server has been disconnected forcibly.

POP Error Codes

Error Messages	Description
ERR never heard of mailbox name	The mail address is incorrect.
ERR invalid password	The password is incorrect.
ERR unable to lock maildrop	The mailbox cannot be used (Another program is already using it).

VK Event Information

Event type	Displayed Messages
Starting or stopping the recording engine	Starting (on)/Stopping (off) Recording engine <status>
User logon	on User (<username>) logged <status>
Sensor	on/off Sensor <sensor name> <status>.
Motion detection	on/off Motion <status>.
Starting or stopping recording	Starting (on)/Stopping (off) Recording stopping or Recording starting <framerate>fps. Pre-event recording for <configured duration> secs.
Starting or stopping the recording settings	Created (on)/Closed (off) File Set <number> <status>
Manual recording and remote trigger	Starting (on)/Stopping (off) For manual recording: Manual recording <user name> <status>. For custom recording: <Custom text provided by the triggered client>.
Disk space warning	warning (on)/ok (off) Disk space on drive <drive> <status>
Starting or stopping deleting due to low disk space	Starting (on)/Stopping (off) <status> deleting files on drive <drive> due to low disk space
Starting or stopping recording due to low disk space	Starting (on)/Stopping (off) <status> suspension of recording on drive <drive> due to low disk space

Event type	Displayed Messages
Connection error to the camera server	Error (on)/ok (off) Connection to host <camera server address> : <port> <status>
Continuing recording	Recording continuing
Changing the recording frame rate	Effective recording rate (<recording rate before change> → <recording rate after change> %) **Recording rate** is the ratio of received images that are actually being recorded. If the rate is 100%, then all received images are recorded. If 50%, 1 frame per 2 frames is recorded.

Error Number: Error Description	Cause
10048: Address in use	A socket for the communication could not be generated because a large number of TCP connections are used in the PC.
10050: Network down	The network is down (when a failure occurs in a HUB or router located near the PC).
10051: Network unreachable	A failure occurred in a HUB or router near the camera server.
10054: Forced disconnection from camera	The TCP connection is disconnected because the camera server was restarted or another cause.
10060: Connection timeout	A timeout occurred in the TCP connection with the camera server (This occurs when the camera server is down).
10061: Camera connection refused	The camera server rejected the TCP connection (This occurs when the port number specification is incorrect or another cause).
10064: Camera power off	The camera server is down (Normally, 10060 occurs).
10065: Camera unreachable	There are no routes to connect to the camera server (This may also occur when there is a failure in the network cable connected to the PC or HUB).
10091: Network board not ready	There is a failure on the PC network board.
11001: Host not found	The host name in DNS could not be resolved.
11004: Host not found	The host name in DNS could not be resolved (11004 may occur instead of 11001 in 2003).
Empty character string	Other Winsock Errors
HT401: Authentication required	The user authentication or password for connecting to the camera server is incorrect. Check to ensure that it is not an on/off event.
HT403: Host/IP address restricted	Cannot connect due to the IP address restriction on the camera server side.
HT502: Bad Gateway 502	The proxy server returns an HTTP 502 error (which occurs when the proxy server receives an error from the upper proxy).
HT503: Service unavailable 503	The proxy server returned an HTTP 503 error (which occurs when the proxy server failed to connect to the camera server).
HT504: Gateway Timeout 504	The proxy server returned an HTTP 504 error (which occurs when the proxy server could not receive a reply from the upper proxy).

Error Number: Error Description	Cause
WV407: Recording-mode streams unavailable	The following settings were configured for the stream for recording. a) JPEG recording at over 10fps b) MPEG-4 recording c) Image upload function is activated on VB-C500D/VB-C60
WV408: Conflict of recording-mode streams	While connecting using the stream for recording, another request for the recording stream was received.
WV601: No audio transmission	Audio transmission from the camera server is disabled.

10

Appendix

Camera Server Control

The following figure shows the order of priority for Camera Server control.

Strong

Application
Panorama Creation Tool
WebView Admin Viewer/NC Viewer (Administrator)/VB-C500D Admin Viewer/VB-C60 Admin Viewer
Motion Detection Settings Tool (VB-C500D/VB-C60/VB-C50i Series VB Administration Tool)
VB-C500D/VB-C60 Admin Viewer (Registered User)
VK-64/VK-16 Storage Server (when a preset is specified for sensor recording)
Motion Detection Module (VB-C500D/VB-C60/VB-C50 Series)
Operating the Camera Server in the VK-64/VK-16 settings window
VK-64/VK-16 Viewer (when the Camera Server is operated in the Viewer)
VK-64/VK-16 Storage Server (when a recording position is specified) VK Preset Tour
VB-C500D/VB-C60 Viewer (Guest User), NC Viewer (Authorized User), Viewer for PC/Viewer for Java (VB-C50i Series)
VB-C60, VB-C50 Preset Tour

Weak

When a recording position is specified in VK-64/VK-16, you cannot operate the camera server using VB-C500D/VB-C60 Viewer (Guest User), NC Viewer, Viewer for PC, or Viewer for Java.

Hard Disk

Lifetime of Hard Disk

A hard disk is a storage device that works physically, and has a limited lifetime. It is a kind of consumables. It is said that the average lifetime of a RAID system composed of SCSI hard disks is three years. However, this lifetime is considered to be true for standard file servers or business servers. The disk failure rate of VK-64/VK-16 systems is higher than that of general file servers. It is reasonable to assume that the lifetime of hard disks in a VK-64/VK-16 system is about half of that of a standard file server (one and a half years).

Therefore, when you build a VK-64/VK-16 system, it is advisable to provide a hot-spare (spare hard disks that are active) for RAID configuration.

RAID Reconfiguration

If one of hard disks in RAID1 and RAID5 systems breaks down, you can restore the system by replacing the broken hard disk before other disks break.

Restoring the data stored on the broken hard disk after replacement is referred to as rebuilding.

During RAID rebuilding, a recording error may occur because disk system performance deteriorates.

RAID Rebuilding Time

When a failure occurs in a hard disk in a RAID system and you want to replace it with a hot-spare or new one, the rebuilding time is to be considered as follows:

- Rebuilding takes about one minute per 1GB when no I/O is performed in a SCSI RAID card.
- When a RAID system is composed of four SCSI hard disks of 300GB each, the total disk size of the hard disks is 1200GB. To rebuild this system, 1200 minutes (20 hours) are required on the condition that there no I/O is performed.
- If rebuilding takes 20 hours when there is no I/O, the rebuilding time for a VK-64/VK-16 system where I/O is continuously performed can be assumed to be about 20 x 2 hours. Thus, when you perform rebuilding without stopping recording, it takes about 40 hours.
- There is no problem if rebuilding only takes a long time. However, the other hard disks may break down one after another during such rebuilding. If another hard disk breaks down during rebuilding, all of the stored data will be lost. Therefore, it is preferable to reduce rebuilding time as far as possible.

Configuration for Reducing Rebuilding Time

As described in the preceding section, it is important to shorten rebuilding time as far as possible. You can reduce rebuilding time by configuring hard disks as follows:

For example, when you create two configurations including three 146GB hard disks and a hot- spare, instead of creating one configuration (900GB) including three 300GB hard disks and a hot-spare, rebuilding requires less time and risks are reduced.

Measures to be Taken When Rebuilding

To reduce the load on the PC during rebuilding and to shorten the rebuilding time, it is also recommended to implement the following measures:

- Stop the Storage Server program before rebuilding.
- Temporarily reduce the recording frame rate during rebuilding.

Notes on Consistency Check of RAID Configuration Information

For stable operation of hard disks, you need to regularly perform consistency check of RAID configuration information. This is especially effective for preventing data inconsistency when rebuilding is performed. However, as with rebuilding, the consistency check of RAID configuration information imposes a burden on the PC for a long period of time.

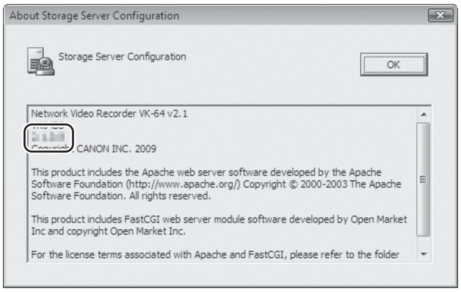
In a consistency check of RAID configuration information, measures such as configuring hard disks in the same way as in rebuilding and reducing the load on the PC, are also important. See "Measures to be Taken When Rebuilding".

How To Check Software Version

Follow the procedure below to check the version of the software.

Storage Server Configuration tool

1. Open the [Storage Server Configuration] dialog.
2. Right-click the title bar of the dialog and select [About Storage Server Configuration].
3. Check the software version in the dialog displayed.


About Storage Server Configuration
Storage Server Configuration
OK

Network Video Recorder VK-64 v2.1
[redacted]
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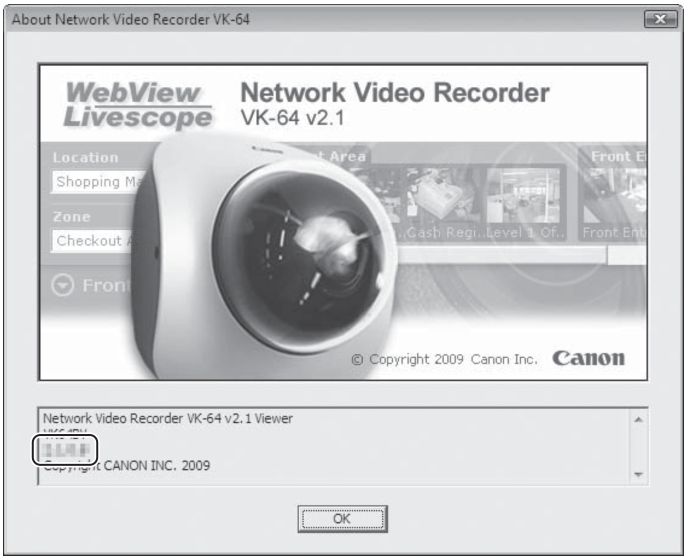
VK Viewer

1. Launch the VK Viewer.
2. Select [About VK Viewer] from the [Help] menu.
3. Check the software version in the dialog displayed.


About Network Video Recorder VK-64
WebView Livescope
Network Video Recorder
VK-64 v2.1
Location
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Front Ent
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Functional Limitations on MPEG-4

VB-C500D and VB-C60 supports MPEG-4 format video in addition to JPEG format video.

However, this are several functional limitations as follows.

Live Viewing

- The following video window settings become disabled, and the frame rate setting of the camera takes effect.
  - Max. Live Frame Rate
  - Auto Adjust Frame Rate
- Synchronization of audio and video is not guaranteed.
- A message is displayed if you attempt to display 21 or more MPEG-4 video windows.

Video Recording

- The recording frame rate cannot be set for the following recording modes.
  - Constant recording
  - Motion detection recording
  - Sensor recording
- The [Reduce recording frame rate when disk is under high load] setting in the Storage Server Settings Tool becomes disabled.
- [Record Now] only supports the JPEG format, and cannot record in MPEG-4 format.

Playback

- Although the following controls can be used when playing back video recorded in MPEG-4 format, the rewind and nudge back controls do not function.
  - Specify playback time using the timeline
  - Begin playback from the live event viewing window and event search window
  - Pause, fast forward, nudge forward, previous event, next event
- If a schedule that had previously been recording in MPEG-4 format is switched to recording in JPEG format, when rewind playback from the JPEG format time range enters the MPEG-4 time range, although the rewind playback continues, the video is not displayed and an error stating "No Recorded Video." is displayed.
- If you attempt to save a time range of recorded video that spans multiple recording schedules, only the video recorded in the oldest schedule is saved.
- The MPEG-4 format video recorded using this software cannot be played back in other software.

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